Iowa Department of Natural Resources
Environmental Protection Commission

ITEM **10** **DECISION**

TOPIC **Notice of Intended Action – Chapter 61 – Water Quality Standards (Antidegradation Policy and Implementation Procedures)**

The commission will be asked to approve a Notice of Intended Action regarding proposed rulemaking to amend the state's antidegradation policy and new implementation procedures.

Antidegradation policy is one of the three components of water quality standards (i.e. designated uses, water quality criteria to protect those uses, and antidegradation policy). The purpose of the antidegradation policy is to set minimum requirements for the state to follow in order to conserve, maintain, and protect existing uses and water quality. The department is required by 40 CFR 131.12(a) to develop and adopt a statewide antidegradation policy and to identify procedures for implementing the policy.

The department is proposing a four-tiered approach and guidance document establishing procedures for implementing the antidegradation policy. The previous draft versions of the antidegradation policy rule, implementation procedures, and other related items can be found at the following web address: http://www.iowadnr.gov/water/standards/antidegradation.html.
The four-tiered approach includes:

Tier 1. Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.

Tier 2. Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless a review of reasonable alternatives and social and economic considerations justifies the degradation. Such a review will need to be demonstrated in an alternatives analysis, which is an evaluation that must explore non-degrading and less-degrading pollution control measures.

Tier 2 ½ - Outstanding Iowa waters. Where high quality waters constitute an outstanding state resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Tier 3 - Outstanding national resource waters. Where high quality waters constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Based on recommendations from the Environmental Protection Commission, the department has proposed to add some waterbodies to category Tier 2 ½ - Outstanding Iowa Waters.

Chuck Corell, Bureau Chief
Water Quality Bureau
September 22, 2008

ENVIRONMENTAL PROTECTION COMMISSION [567]

Notice of Intended Action

Pursuant to the authority of Iowa Code sections 455B.105 and 455B.173, the Environmental Protection Commission gives Notice of Intended Action to amend Chapter 61, "Water Quality Standards," Iowa Administrative Code.

The proposed amendments will:

- Incorporate by reference the document entitled “Iowa Antidegradation Implementation Procedure,” which proposes an approach to be followed in assessing and minimizing degradation of Iowa’s surface waters.
- Update antidegradation policy language with four tier approach
- Remove High Quality (Class HQ) and High Quality Resource (Class HQR) designated uses, as they are being replaced by the four tier approach.

Iowa Code (Sections 455B.171 – 455B.183) establishes requirements for the protection and management of surface water quality. The Environmental Protection Commission, through the assistance of the department, promulgates administrative regulations on water quality. Iowa’s Water Quality Standards (WQS) are written into regulation at 567 IAC Chapter 61 – Water Quality Standards. The specific portion of the regulation prescribing the policy on antidegradation is 567 IAC Chapter 61.2(2).

The antidegradation rule is one of three required regulatory elements of the WQS. The other two elements include beneficial uses, and water quality criteria (narrative and numeric). All of these

review elements must be administered as a whole. All surface waters of the state are subject to antidegradation provisions. The main purpose of the antidegradation policy and implementation procedures is to protect existing uses of surface waters and to specify how the department will determine, on a case-by-case basis, whether and to what extent, existing water quality may be lowered in a surface water.

The Iowa Department of Natural Resources is required by 40 CFR §131.12(a) to develop and adopt a statewide antidegradation policy and to identify procedures for implementing that policy. There has been an antidegradation policy in the WQS, but formal implementation procedures were absent which limited the policy's usefulness. The proposed implementation procedures include identifying the antidegradation review levels (i.e., the "tiers") that apply to a surface water; determining existing water quality; assessing and determining water quality degradation; identifying and assessing less-degrading or non-degrading alternatives; determining the importance of economic or social development to justify degradation of waters; and establishing intergovernmental coordination and public participation processes.

The antidegradation policy and implementing procedures are intended to provide guidance to persons who are responsible for the regulated activities that may degrade water quality in Iowa. Regulated activities include any activity that requires a CWA permit or a water quality certification pursuant to federal law.

This effort will also establish the Outstanding National Resource Waters (ONRW) and Outstanding Iowa Waters (OIW) antidegradation use categories. These categories will provide an increased level of protection where degradation is prohibited except in limited circumstances. The implementation procedures detail how the public can nominate a surface water to be afforded these levels of protection to the department.

Additional information on Iowa's Water Quality Standards and the Department's rules can be found on the Department's Web site at http://www.iowadnr.com/water/standards/index.html.

Any person may submit written suggestions or comments on the proposed amendments through January 29, 2009. Such written material should be submitted to Adam Schnieders, Iowa Department of Natural Resources, Wallace State Office Building, 502 East 9th Street, Des Moines, Iowa 50319-0034, fax (515)281-8895 or by E-mail to adam.schnieders@dnr.iowa.gov. Persons who have questions may contact Adam Schnieders at (515)281-7409.

Persons are invited to present oral or written comments at public hearings which will be held:

December 12, 2008	1 p.m.	Wallace State Office Building Fifth Floor Conference Rooms 502 East 9th Street Des Moines, IA 50319
December 15, 2008	10 a.m.	Washington Public Library 120 E. Main Street Washington, IA 52353
December 17, 2008	10 a.m.	Storm Lake Public Library 609 Cayuga Street Storm Lake, IA 50588
December 17, 2008	6 p.m.	Atlantic Municipal Utilities Conference Room 15 W. Third St. Atlantic, IA 50022
December 18, 2008	1 p.m.	Clear Lake Community Meeting Room 15 N. Sixth St. Clear Lake, IA 50428
January 8, 2009	7 p.m.	Iowa Lakeside Laboratory Waitt Building 1838 Highway 86 Milford, IA 51351
January 14, 2009	10 a.m.	Manchester Public Library 304 Franklin Street Manchester, IA 52057

January 14, 2009	6 p.m.	Northeast Iowa Community College - Waukon 1220 3rd Avenue, Suite 102, Room 115 Waukon, IA 52172
January 15, 2009	1 p.m.	Davenport Public Library 321 Main, Film Room Davenport, IA 52801

These amendments may have an impact upon small businesses.

These amendments are intended to implement Iowa Code chapter 455B, division III, part 1.

The following amendments are proposed.

ITEM 1. Amend subrule 61.2(2) as follows:

61.2(2) Antidegradation policy. It is the policy of the state of Iowa that:

a. Tier 1 protection. Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.

b. Tier 2 protection. Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the department shall assure water quality adequate to protect existing uses fully. Further, the department shall assure the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality.

c. Tier 2 ½ protection – Outstanding Iowa waters. Where high quality waters constitute an outstanding state resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

d. Tier 3 protection – Outstanding national resource waters. Where high quality waters constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. Any proposed activity that would result in a permanent new or expanded direct source of pollutants in an Outstanding National Resource Water is prohibited.

e. The four levels of protection provided by the antidegradation policy in subsections (a) through (d) of this section shall be implemented according to procedures hereby incorporated by

reference and known as the "Iowa Antidegradation Implementation Procedure," effective (insert effective date). This document may be obtained on the Department's Web site at http://www.iowadnr.com/water/standards/index.html.

f. All unapproved facility plans for new or expanded construction permits, except for construction permits issued on non-discharging facilities, shall undergo an antidegradation review if degradation is likely in the receiving water or downstream waters following the effective date of the "Iowa Antidegradation Implementation Procedure".

~~*a*. Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.~~

~~*b*. Chemical integrity: For those water bodies where water quality significantly exceeds levels necessary to protect existing uses and the waters designated as high quality in 61.3(5)"*e*," that water quality will be maintained at or above existing quality, except when it is determined by the environmental protection commission after public hearing and after intergovernmental coordination and public participation provisions noted in the continuing planning process that there is need to allow a lower chemical quality because of necessary and justifiable economic and social development in the area.~~

~~The state shall ensure adequate chemical quality to fully protect existing uses.~~

~~(1) Bear Creek, mouth in Winneshiek County and tributary to the Upper Iowa River.~~

~~(2) Bloody Run, mouth in Clayton County and tributary to the Mississippi River.~~

~~(3) Catfish Creek from Swiss Valley Park in Dubuque County to its source.~~

~~(4) Unnamed Creek known locally as Coldwater Creek with mouth in Winneshiek County and tributary to the Upper Iowa River.~~

~~(5) Fenchel Creek, mouth to Richmond Springs, in Delaware County and tributary to the Maquoketa River.~~

~~(6) Odell Branch (aka Fountain Spring Creek), mouth (section 10, T90N, R4W, Delaware County), tributary to Elk Creek, which is tributary to the Turkey River to west line of section 9, T90N, R4W, Delaware County.~~

~~(7) Iowa Great Lakes chain of lakes in Dickinson County, including West Lake Okoboji, Spirit Lake, East Lake Okoboji, Minnewashta Lake, Upper Gar Lake, and Lower Gar Lake.~~

~~(8) North Bear Creek, with mouth in Winneshiek County and tributary to Bear Creek, listed as number 1 in this listing.~~

~~(9) North Cedar Creek, with mouth in Clayton County and tributary to Sny Magill Creek.~~

~~(10) Sny Magill Creek, with mouth in Clayton County and tributary to the Mississippi River.~~

~~(11) Turkey River, from the point where it is joined by the Volga River in Clayton County to Vernon Springs in Howard County.~~

~~(12) Waterloo Creek, with mouth in Allamakee County and tributary to the Upper Iowa River.~~

~~(13) Maquoketa River, from confluence with South Fork Maquoketa River (section 16, T90N, R6W, Delaware County) to Highway 3 (north line of section 24, T91N, R7W, Fayette County).~~

~~(14) Spring Branch, mouth (section 10, T88N, R5W, Delaware County) to spring source (section 35, T89N, R5W, Delaware County).~~

~~(15) Little Turkey River, Clayton-Delaware County line to south line of section 11, T90N, R3W, Delaware County.~~

~~(16) Middle Fork Little Maquoketa River (aka Bankston Creek), west line of section 31, T90N, R1E to north line of section 33, T90N, R1W, Dubuque County.~~

~~(17) Brush Creek, north line of section 23, T85N, R3E to north line of section 1, T85N, R3E, Jackson County.~~

~~(18) Dalton Lake — Jackson County.~~

~~(19) Little Mill Creek, mouth (Jackson County) to west line of section 29, T86N, R4E, Jackson County.~~

~~(20) Mill Creek (aka Big Mill Creek), from confluence with Little Mill Creek in section 13, T86N, R4E, Jackson County, to confluence with Unnamed Creek, section 1, T86N, R3E, Jackson County.~~

~~(21) Unnamed Creek (tributary to Mill Creek), mouth (section 1, T86N, R3E, Jackson County) to west line of section 1, T86N, R3E, Jackson County.~~

~~(22) Unnamed Creek (aka South Fork Big Mill), tributary to Mill Creek, from mouth (section 8, T86N, R4E, Jackson County) to west line of section 17, T86N, R4E, Jackson County.~~

~~(23) Clear Creek, mouth (Allamakee County) to west line of section 25, T99N, R4W, Allamakee County.~~

~~(24) French Creek, mouth (Allamakee County) to east line of section 23, T99N, R5W, Allamakee County.~~

~~(25) Hickory Creek, mouth (Allamakee County) to south line of section 28, T96N, R5W, Allamakee County.~~

~~(26) Little Paint Creek, mouth to north line of section 30, T97N, R3W, Allamakee County.~~

~~(27) Paint Creek, from confluence with Little Paint Creek to road crossing in section 18, T97N, R4W, Allamakee County.~~

~~(28) Patterson Creek, mouth (Allamakee County) to east line of section 3, T98N, R6W, Allamakee County.~~

~~(29) Silver Creek, mouth (Allamakee County) to south line of section 31, T99N, R5W, Allamakee County.~~

~~(30) Village Creek, mouth (Allamakee County) to west line of section 19, T98N, R4W, Allamakee County.~~

~~(31) Wexford Creek, mouth to west line of section 25, T98N, R3W, Allamakee County.~~

~~(32) Buck Creek, mouth (Clayton County) to west line of section 9, T93N, R3W, Clayton County.~~

~~(33) Ensign Creek (aka Ensign Hollow), mouth (section 28, T92N, R6W, Clayton County) to spring source (section 29, T92N, R6W, Clayton County).~~

~~(34) South Cedar Creek (aka Cedar Creek), mouth (Clayton County) to north line of section 7, T92N, R3W, Clayton County.~~

~~(35) Bear Creek, mouth (Fayette County) to west line of section 6, T92N, R7W, Fayette County.~~

~~(36) Unnamed Creek (aka Glover's Creek), mouth to west line of section 15, T94N, R8W, Fayette County.~~

~~(37) Grannis Creek, mouth to west line of section 36, T93N, R8W, Fayette County.~~

~~(38) Mink Creek, mouth to west line of section 15, T93N, R7W, Fayette County.~~

~~(39) Otter Creek, mouth (Fayette County) to confluence with Unnamed Creek (aka Glover's Creek) in section 22, T94N, R8W, Fayette County.~~

~~(40) Nichols Creek (aka Bigalk Creek), mouth (section 18, T100N, R10W, Winneshiek County) to west line of section 23, T100N, R11W, Howard County.~~

~~(41) Spring Creek, mouth (Mitchell County) to north line of section 8, T97N, R16W, Mitchell County.~~

(42) Turtle Creek, mouth (Mitchell County) to east line of section 7, T99N, R17W, Mitchell County.

(43) Wapsipinicon River, from the town of McIntire to north line of section 20, T99N, R15W, Mitchell County.

(44) Bohemian Creek, mouth (Winneshiek County) to Howard County Road V58 (west line of section 2, T97N, R11W, Howard County).

(45) Coon Creek, mouth (Winneshiek County) to road crossing in section 13, T98N, R7W, Winneshiek County.

(46) Smith Creek (aka Trout River), mouth to south line of section 33, T98N, R7W, Winneshiek County.

(47) Unnamed Creek (aka Trout Run), mouth to south line of section 27, T98N, R8W, Winneshiek County.

(48) Twin Springs Creek, mouth to springs in Twin Springs Park in section 20, T98N, R8W, Winneshiek County.

(49) Canoe Creek (aka West Canoe Creek), from Winneshiek County Road W38 to west line of section 8, T99N, R8W, Winneshiek County.

c. Standards and restrictions more stringent than those applied to other waters may be applied by the commission to those waters listed below when it is determined that such more stringent standards and restrictions are necessary to fully maintain water quality at existing levels.

West Lake Okoboji in Dickinson County.

d. The Mississippi River and the Missouri River do not meet the criteria of 61.2(2)"*c*" but nevertheless constitute waters of exceptional state and national significance. Water quality management decisions will be made in consideration of the exceptional value of the resource.

e. In furtherance of the policy stated in 61.2(2)"*b,*" there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources, and feasible management and regulatory programs pursuant to Section 208 of the Federal Water Pollution Control Act for nonpoint sources, both existing and proposed.

f. Physical and biological integrity: The waters designated as high-quality resource waters in61.3(5)"*e*" will receive protection of existing uses through maintaining water quality levels necessary to fully protect existing uses or improve water quality to levels necessary to meet the designated use criterion in Tables 1, 2 and 3 and at preserving or enhancing the physical and biological integrity of these waters. This involves the protection of such features of the water body as channel alignment, bed characteristics, water velocity, aquatic habitat, and the type, distribution and abundance of existing aquatic species.

g. It is the intent of the antidegradation policy to protect and maintain the existing physical, biological, and chemical integrity of all waters of the state. Consistency with Iowa's water quality standards requires that any proposed activity modifying the existing physical, biological, or chemical integrity of a water of the state shall not adversely impact these resource attributes, either on an individual or cumulative basis. An adverse impact shall refer to the loss of or irreparable damage to the aquatic, semiaquatic or wildlife habitat or population, or a modification to the water body that would cause an overall degradation to the aquatic or wildlife population and diversity. The fish and wildlife division of the department and the U.S. Fish and Wildlife Service shall serve as consultants to the department for assessing impacts. Exceptions to the preceding will be allowed only if full mitigation is provided by the applicant and approved by the department.

For those waters of the state designated as high quality or high quality resource waters and the Mississippi and Missouri Rivers, any proposed activity that will adversely impact the existing

~~physical, chemical, or biological integrity of that water will not be consistent with Iowa's water quality standards. Mitigation will not be allowed except in highly unusual situations where no other project alternatives exist. In these cases, full mitigation must be provided by the applicant and approved by the department.~~

~~*h*~~*g*. This policy shall be applied in conjunction with water quality certification review pursuant to Section 401 of the Act. In the event that activities are specifically exempted from flood plain development permits or any other permits issued by this department in 567—Chapters 70, 71, and 72, the activity will be considered consistent with this policy. Other activities not otherwise exempted will be subject to 567—Chapters 70, 71, and 72 and this policy. ~~The repair and maintenance of a drainage district ditch as defined in 567—70.2(455B,481A) will not be considered a violation of the antidegradation policy for the purpose of implementing Title IV of these rules.~~ United States Army Corps of Engineers (Corps) nationwide permits 3, 4, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 27, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50 as well as Corps regional permits 7, 33, and 34 as promulgated March 19, 2007, are certified pursuant to Section 401 of the Clean Water Act subject to the following Corps regional conditions and the state water quality conditions:

(1) Side slopes of a newly constructed channel will be no steeper than 2:1 and planted to permanent, perennial, native vegetation if not armored.

(2) Nationwide permits with mitigation may require recording of the nationwide permit and pertinent drawings with the registrar of deeds or other appropriate official charged with the responsibility for maintaining records of title to, or interest in, real property and may also require the permittee to provide proof of that recording to the Corps.

(3) Mitigation shall be scheduled prior to, or concurrent with, the discharge of dredged or fill material into waters of the United States.

(4) For discharges of dredged or fill material resulting in the permanent loss of more than 1/10 acre of waters of the United States (including jurisdictional wetlands), a compensatory mitigation plan to offset those losses will be required. In addition, a preconstruction notice to the Corps of Engineers in accordance with general condition 27 will be required.

(5) For newly constructed channels through areas that are unvegetated, native grass filter strips or a riparian buffer with native trees or shrubs a minimum of 35 feet wide from the top of the bank must be planted along both sides of the new channel. A survival rate of 80 percent of desirable species shall be achieved within three years of establishment of the buffer strip.

(6) For single-family residences authorized under nationwide permit 29, the permanent loss of waters of the United States (including jurisdictional wetlands) must not exceed 1/4 acre.

(7) For nationwide permit 46, the discharge of dredged or fill material into ditches that would sever the jurisdiction of an upstream water of the United States from a downstream water of the United States is not allowed.

(8) For projects that impact fens, bogs, seeps, or sedge meadows, an individual Section 401 Water Quality Certification will be required (Iowa Section 401 Water Quality Certification condition).

(9) For nationwide permits when the Corps' district engineer has issued a waiver to allow the permittee to exceed the limits of the nationwide permit, an individual Section 401 Water Quality Certification will be required (Iowa Section 401 Water Quality Certification condition). Written verification by the Corps or 401 certification by the state is required for activities covered by these permits as required by the nationwide permit or the Corps, and the activities are allowed subject to

the terms and conditions of the nationwide and regional permits. The department will maintain and periodically update a guidance document listing special waters of concern. This document will be provided to the Corps for use in determining whether preconstruction notices should be provided to the department and other interested parties prior to taking action on applications for projects that would normally be covered by a nationwide or regional permit and not require preconstruction notice under nationwide permit conditions.

ITEM 2. Amend subrule 61.3(1), paragraph "b," by removing subparagraphs (6) and (7) and renumber subrule 61.3(3), paragraph “b”, subparagraphs (8), (9), (10), (11), (12), and (13) to (6), (7), (8), (9), (10) and (11), as follows:

~~(6) High quality water (Class “HQ”). Waters with exceptionally better quality than the levels specified in Tables 1, 2 and 3 and with exceptional recreational and ecological importance. Special protection is warranted to maintain the unusual, unique or outstanding physical, chemical, or biological characteristics which these waters possess.~~

~~(7) High quality resource water (Class “HQR”). Waters of substantial recreational or ecological significance which possess unusual, outstanding or unique physical, chemical, or biological characteristics which enhance the beneficial uses and warrant special protection.~~

(~~8~~6) Warm water—Type 1 (Class “B(WW-1)”). Waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. These waters generally include border rivers, large interior rivers, and the lower segments of medium-size tributary streams.~~.~~

(~~9~~7) Warm water—Type 2 (Class “B(WW-2)”). Waters in which flow or other physical characteristics are capable of supporting a resident aquatic community that includes a variety of native nongame fish and invertebrate species. The flow and other physical characteristics limit the maintenance of warm water game fish populations. These waters generally consist of small perennially flowing streams.

(~~10~~8) Warm water—Type 3 (Class “B(WW-3)”). Waters in which flow persists during periods when antecedent soil moisture and groundwater discharge levels are adequate; however, aquatic habitat typically consists of nonflowing pools during dry periods of the year. These waters generally include small streams of marginally perennial aquatic habitat status. Such waters support a limited variety of native fish and invertebrate species that are adapted to survive in relatively harsh aquatic conditions.

(~~11~~9) Lakes and wetlands (Class “B(LW)”). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.

(~~12~~10) Human health (Class “HH”). Waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption.

(~~13~~11) Drinking water supply (Class “C”). Waters which are used as a raw water source of potable water supply.

ITEM 3. Amend the Bacteria Criteria Table in subrule 61.3(3), paragraph "a," subparagraphs (1) as follows:

Bacteria Criteria Table (organisms/100 ml of water)

Use or Category	Geometric Mean	Sample Maximum
Class A1		
3/15 - 11/15	126	235
11/16 - 3/14	Does not apply	Does not apply
Class A2 (Only)		
3/15 - 11/15	630	2880
11/16 - 3/14	Does not apply	Does not apply
Class A2 and (B(CW) or ~~HQ~~ OIW or ONRW)		
Year Round	630	2880
Class A3		
3/15 - 11/15	126	235
11/16 - 3/14	Does not apply	Does not apply
Class A1 – Primary Contact Recreational Use Class A2 - Secondary Contact Recreational Use Class A3 – Children's Recreational Use		

ITEM 4. Amend subrule 61.3(5) Surface Water Classification as follows:

The department hereby incorporates by reference "Surface Water Classification," effective ~~June 11, 2008~~ [insert effective date]. This document may be obtained ~~from the Records Center, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand Avenue, Des Moines, Iowa 50319-0034, or~~ on the department's Web site at http://www.iowadnr.com/water/standards/index.html.

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Date

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Richard Leopold, Director

Iowa Antidegradation Implementation Procedure

Iowa Department of Natural Resources
Water Resources Section

September 2, 2008 – DRAFT

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Glossary

Alternatives Analysis: An evaluation of reasonable alternatives to regulated activities that might degrade water quality, including less-degrading alternatives, nondegrading alternatives, and no-discharge alternatives, such as treatment process changes, relocated discharge facilities, land application, reuse, and subsurface discharges.

Antidegradation: A regulatory policy and implementation procedure to protect existing uses of surface waters and to specify how IDNR will determine, on a case-by-case basis, whether and to what extent, existing water quality may be lowered in a surface water.

Assimilative Capacity: The amount of contaminant load that can be discharged to a specific water body without exceeding the numeric water quality criteria associated with a pollutant of concern (POC). Assimilative capacity is used to define the ability of a water body to assimilate a discharged substance without impairing beneficial uses.

Beneficial Uses: All existing and designated uses on or in surface waters of the state.

Degradation: A decline in the chemical, physical, or biological conditions of a surface water as measured on a pollutant-by-pollutant basis.

Designated Use: A beneficial use assigned to a water of the state as shown in the Water Quality Standards – (IAC 567 – 61.3(1)).

Existing Use: Those beneficial uses actually attained in a surface water on or after November 28, 1975, whether or not the uses are designated in the water quality standards.

Existing Water Quality: A characterization of selected pollutants of concern in a surface water as measured and expressed during a specified time period. Once established, baseline water quality is a fixed quantity/quality unless it is updated by IDNR to reflect changes in water quality.

Less-Degrading Alternative: A reasonable alternative to a proposed discharge or change to an existing discharge that would result in fewer detrimental changes to water quality than an alternative that protects existing uses.

Minimum Level of Pollution Control: Controls required to protect existing uses and to achieve all statutory and regulatory requirements for the waters under evaluation.

"Necessary": No reasonable alternative(s) exist to prevent degradation.

Non-Degrading Alternative: A reasonable alternative to a proposed or existing discharge that would not result in degradation of water quality as characterized by the existing water quality assessment.

Outstanding Iowa Water: A surface water that IDNR has classified as an outstanding state resource water in the water quality standards. An Outstanding Iowa Water receives Tier 2 ½ protection.

Outstanding National Resource Water: A surface water that IDNR has classified as an outstanding national resource water in the water quality standards. An Outstanding National Resource Water receives Tier 3 protection.

Pollutant of Concern: Pollutants of concern for antidegradation reviews include those pollutants which are reasonably expected to be present in the discharge and may reasonably expected to affect the beneficial uses.

Regulated activity: includes any activity that requires a permit or a water quality certification pursuant to the following federal laws: 1) CWA § 402 NPDES permits, 2) CWA § 404 dredge and fill permits, 3) any activity requiring a CWA § 401 certification.

Social and Economic Importance (SEI): The social and economic benefits to the community that will occur from any activity resulting in a new or expanded discharge.

Temporary and Limited Degradation: Degradation that is not permanent. The effects can be regarded as temporary and limited following a review of all of the following factors, if applicable:

a) length of time during which water quality will be lowered
b) percent change in ambient conditions
c) pollutants affected
d) likelihood for long term water quality benefits to the water body
e) degree to which achieving the applicable Water Quality Standards during the proposed activity will be at risk
f) potential for any long term influences on existing uses

Tier 1 Review: Policies and procedures that prohibit degradation which results in the loss or impairment of a beneficial use or violation of water quality criteria and that prohibit degradation of existing water quality where pollutants of concern are at or violating applicable water quality standards. Tier 1 protection applies to all surface waters regardless of existing water quality as the minimum protection level.

Tier 2 Review: Policies and procedures that prohibit degradation of a surface water unless a review of reasonable alternatives and social and economic considerations justifies a lowering of water quality or the lowering of water quality is temporary and limited. Tier 2 protection level applies to all designated waters where existing water quality is better than applicable water quality standards as determined on a pollutant-by-pollutant basis.

Tier 2 ½ Review: Policies and procedures that prohibit any lowering of water quality in unique waters as identified in the water quality standards unless the lowering is temporary and limited or serve to maintain or enhance the value, quality, or use of the Outstanding Iowa Water, as determined by the Director of IDNR on a case-by-case basis.

Tier 3 Review: Policies and procedures that prohibit any lowering of water quality in unique waters as identified in the water quality standards unless it is temporary and limited, as determined by the Director of IDNR on a case-by-case basis. Any proposed activity that would result in a permanent new or expanded direct source of pollutants is prohibited.

Water Quality Criteria: Elements of water quality standards that are expressed as pollutant concentrations, levels, or narrative statements representing a water quality that supports a designated use.

ANTIDEGRADATION IMPLEMENTATION PROCEDURE

1 Purpose and Overview

These procedures are intended to provide guidance to persons who are responsible for the regulated activities that may degrade water quality in Iowa. **Regulated activities** include any activity that requires a permit or a water quality certification pursuant to federal law.

The following are the implementation procedures for Iowa's antidegradation rule found at 567 Iowa Administrative Code Chapter 61.2(2) and federal antidegradation policy at Title 40 Code of Federal Regulations (CFR) Section §131.12. The Iowa Department of Natural Resources (department) is required by 40 CFR §131.12(a) to develop and adopt a statewide antidegradation policy and to identify procedures for implementing that policy. Implementation includes:

- identifying the antidegradation review levels (i.e., the "tiers") that apply to a surface water;
- determining existing water quality;
- assessing and determining water quality degradation;
- identifying and assessing less-degrading or non-degrading alternatives;
- determining the importance of economic or social development to justify degradation of waters; and
- establishing intergovernmental coordination and public participation processes.

1.1 Summary of Applicable Laws and Regulations on Antidegradation

Iowa Code (Sections 455B.171 – 455B.183) establishes requirements for the protection and management of surface water quality. The Environmental Protection Commission, through the assistance of the department, promulgates administrative regulations on water quality. Iowa's Water Quality Standards (WQS) are written into regulation at 567 IAC Chapter 61 – Water Quality Standards. The specific portion of the regulation prescribing the policy on antidegradation is 567 IAC Chapter 61.2(2).

The antidegradation rule is one of three required regulatory elements of the WQS. The other two elements include beneficial uses, and water quality criteria (narrative and numeric). All of these review elements must be administered as a whole. All surface waters of the state are subject to antidegradation provisions.

The designated uses and the applicable water quality criteria can be found in 567 IAC Chapter 61. All waters of the state are subject to general criteria contained in 567 IAC Chapter 61.3(2). All waters listed in the Surface Water Classification have beneficial uses and are subject to the specific (i.e., numeric) water quality criteria contained in 567 IAC Chapter 61.3(3) – Table 1, 2, 3a, 3b, 3c and the Bacteria Criteria Table.

Beneficial uses may vary in a water body and may change at various locations. Most waters have more than one beneficial use. Where more than one use exists, or has been designated for a water, the use with the most stringent water quality requirements must be maintained and protected.

An antidegradation review shall be performed for the entire segment (or multiple segments) of water that could be degraded by a new or expanded discharge. The review may extend into more

than one designated segment depending on the pollutant load within the discharge and the distance to and assimilative capacity of waters downgradient of the discharge point. The review must extend downgradient as far as degradation could occur regardless of the classification status of the receiving waters. If the potential degradation is confined within a single segment, the review may be limited to only the portion of the segment to be affected.

Waters listed in appendix C & D of this document are considered outstanding and warrant special protection. These waters include the state's Outstanding Iowa Waters and the Outstanding National Resource Waters . The degradation of water quality in Outstanding Iowa Waters and Outstanding National Resource Waters is prohibited except under specific circumstance described in Section 1.2.

All waters of the state are protected under at least one of four tiers of the antidegradation rule. Subsection 1.2 of this document describes these tiers and explains how the protection levels are assigned to each water. How the tier protection level may be revised is explained in Subsection 1.3 of this document.

1.2 Assigning Tier Protection Levels

The following four levels (or tiers) protect water quality from degradation in all waters of the state on a pollutant-by-pollutant basis. Under this approach, surface water quality might degrade for one or more pollutants of concern but be unaffected by other pollutants. The tiers are specified in rule at 567 IAC Chapter 61.2. as follows:

> **61.2 Antidegradation policy.** It is the policy of the state of Iowa that:
> *a. Tier 1 protection.* Existing surface water uses and the level of water quality necessary to protect the existing uses will be maintained and protected.
> *b. Tier 2 protection.* Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the department shall assure water quality adequate to protect existing uses fully. Further, the department shall assure the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality.
> *c. Tier 2 ½ protection – Outstanding Iowa waters*. Where high quality waters constitute an outstanding state resource, such as waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.
> *d. Tier 3 protection – Outstanding national resource waters*. Where high quality waters constitute an outstanding national resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. Any proposed activity that would result in a permanent new or expanded direct source of pollutants in an Outstanding National Resource Water is prohibited.
> e. The four levels of protection provided by the antidegradation policy in subsections (a) through (d) of this section shall be implemented according to procedures hereby incorporated by reference and known as the "Iowa Antidegradation Implementation Procedure," effective (insert effective date). This document may be obtained on the Department's Web site at http://www.iowadnr.com/water/standards/index.html.

The protections created by those sections of the rule, in combination with the policies and procedures outlined in this document, can be comprehensively summarized as follows:

Tier 1:
Applies to all surface waters as a minimum level of protection and requires that the level of water quality necessary for existing uses be maintained and protected. Tier 1 requires that the Water Quality Standards be achieved. Tier 1 review shall prohibit degradation that may cause or contribute to the impairment of a beneficial use or violation of water quality criteria. Tier 1 protection applies to all surface waters, regardless of the existing water quality.

Assigning Tier 1 Review
Prior to allowing any new or expanded discharges of a pollutant, the department and applicant must conduct a Tier 1 review and demonstrate that the discharge would not violate the water quality criterion for that pollutant. Those pollutants that are documented as already being at or violating Water Quality Standards will receive only a Tier 1 review.

Tier 2:
Tier 2 protection applies on a pollutant-by-pollutant basis to all designated waters. Tier 2 protection does not apply to general use segments because those segments are defined as being unable to support a viable aquatic community during low flow and do not maintain pooled conditions during periods of no flow. General use segments cannot have water quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water because these segments lack the water quantity sufficeient to support these uses. Tier 2 review shall prohibit the degradation of water quality of a surface water unless a review of reasonable alternatives and social and economic considerations justifies the degradation in accordance with the procedures presented in this document.

Assigning Tier 2 Review
A Tier 2 review shall be conducted on all designated waters of the state for new and expanding discharges, unless one of the following conditions apply:

- the water is an OIW or ONRW to which Tier 2 ½ & Tier 3 protection applies or,
- water quality is worse than the applicable water quality criteria for the pollutants of concern.

Tier 2 ½:
Policies and procedures that prohibit any degradation of water quality of the Outstanding Iowa Waters (OIWs) as identified in Appendix C. Temporary and limited degradation of water receiving Tier 2 ½ protection may be allowed by the department on a case-by-case basis as explained in Subsection 1.2 & 2.4 of this document.

Assigning Tier 2 ½ Review
Degradation of water quality in Outstanding Iowa Waters is prohibited except from short-term effects of temporary degradation as defined. This prohibition applies to new sources and expansion of existing sources in which treatment levels are maintained. Proposed expansions that would also upgrade treatment levels such that existing loading levels will be maintained or reduced may be authorized. Decisions regarding whether to allow new or expanded sources will be made on a case-by-case basis using appropriate techniques and best professional judgment of department staff.

However, an exception may be made for permanent new or expanded sources that, overall, serve to maintain or enhance the value, quality, or use of the OIW. Prior to allowing exceptions, the

department shall work with the project applicant to identify the least degrading alternative. For example, a new or expanded source of wastewater treatment facility effluent associated with a visitor center may be authorized where reasonable non-degrading or less degrading treatment alternatives to allowing a new or expanded source are not available. The department shall utilize the procedures included in Section 3 to evaluate alternatives. Exceptions will be granted on a case-by-case basis only where uses will be fully protected and effects on existing water quality will be minimal.

Tier 3:
Policies and procedures that prohibit any degradation of water quality of Outstanding National Resource Waters (ONRWs) as identified in Appendix D. Temporary and limited degradation of water receiving Tier 3 protection may be allowed by the department on a case-by-case basis as explained in Section 1.2 & 2.4 of this document. Any proposed activity that would result in a permanent new or expanded direct source of pollutants in an ONRW is prohibited.

Assigning Tier 3 Review
Degradation of water quality in Outstanding National Resource Waters is prohibited except from short-term effects of temporary degradation as defined. Any proposed activity that would result in permanent new or expanded direct source of pollutants to any segment which has been classified as ONRW is prohibited. This prohibition applies to new sources, and expansion of existing sources in which treatment levels are maintained.

Temporary Lowering of Water Quality for Tier 2 ½ and Tier 3
Factors that may be considered in judging whether OIW & ONRW quality may be temporarily lowered include:

- Percent change in ambient conditions predicted at the appropriate critical conditions;
- Percent change in loading (i.e. the new or expanded loading compared to total existing loading to the segment);
- Percent reduction in assimilative capacity;
- Nature, persistence, and potential effects of the parameter;
- Potential for cumulative effects, and;
- Degree of confidence in the various components of any modeling technique utilized (e.g. degree of confidence associated with the predicted effluent variability)

Pollutant-by-Pollutant Basis
The level of protection identified above determines the type of antidegradation review required when new or expanded discharges are proposed. Because the Tier 1 and 2 reviews are conducted on a pollutant-by-pollutant basis, this document refers to these reviews as a review of a "pollutant" as opposed to a review of the overall quality of a "water body."

For example, where a perennial surface water is impaired for one or more pollutants, and where existing water quality for other parameters is better than water quality standards, the surface water will be afforded Tier 1 and Tier 2 protection on a pollutant-by-pollutant basis. That is, only Tier 1 protection for the pollutants at or violating water quality standards and both Tier 1 and Tier 2 protection for pollutants that are better than water quality standards. Tier 2 ½ & Tier 3 protection will be afforded for all pollutants of concern in Outstanding Iowa Waters (OIW) and Outstanding National Resource Waters (ONRW). *Where waters have not been listed as impaired*

or as an OIW and ONRW, the presumed antidegradation protection level is Tier 2 for all pollutants of concern.

Because Tier 1 and 2 reviews are conducted on a pollutant-by-pollutant basis as opposed to on a water body-by-water body approach, the allowance for degradation of water quality through a discharge of a pollutant depends on the existing level of that pollutant within the receiving water (i.e., the existing water quality), and the probability of promptly restoring the quality where pollutants levels are elevated. The pollutants of concern may be discharged to the water body if:

1) the discharge would not cause or contribute to a violation of the WQS or the loss or impairment of a beneficial use;

2) all other conditions of the state permitting requirements are met (i.e., technology-based requirements are met); and

3) the permit is issued reflecting the highest statutory and regulatory requirements. Subsection 2.1 of this document lists other examples of discharges not requiring a Tier 2 review based on the temporary degradation that results during those discharges.

In the absence of information on existing water quality, waters shall automatically receive Tier 2 review prior to receiving any additional pollutants of concern that might result in a degradation of the water quality. An exception is made for OIWs and ONRWs that shall always be given Tier 2 ½ & Tier 3 protection.

1.3 Revising Tier Review Levels

The default tier review will change from Tier 2 ½ or Tier 3 to Tier 2 if the water is no longer categorized through rule making as an OIW or ONRW. The change in a review level of an OIW or ONRW will require an opportunity for public review as outlined in Section 6 of this document.

Any person may nominate a surface water to be afforded Tier 2 ½ or 3 level of protection by filing a nomination with the department. The department considers nominations during the triennial review of surface water quality standards. The nominating party has the burden of establishing the basis for classifying a surface water as an OIW or ONRW. The nomination shall include a map and description of the surface water; a statement in support of the nomination, including specific reference to the applicable criteria for unique water classification; supporting evidence that the applicable criteria are met; and available, relevant water quality data for establishing existing water quality. The department may classify a surface water as an OIW or ONRW based on one or more of the following criteria:

- The surface water is a perennial water and is in a free-flowing condition;
- Location of the surface water (e.g. on federal lands such as national parks or national wildlife refuges);
- The ecological value of the surface water (e.g. biologically diverse);
- The surface water has pristine water quality;
- The surface water is of exceptional recreational or ecological significance because of its unique attributes;
- The surface water supports threatened or endangered species or provides critical habitat for a threatened or endangered species;

- The surface water is highly aesthetic; has archeological, cultural, or scientific importance; or provides a special educational opportunity; and/or
- Any other factors the Department considers relevant as demonstrating the surface water's outstanding value as a resource.

The department will consider the following factors when making a decision whether to classify a nominated surface water as OIW or ONRW:

- Whether there is the ability to manage the OIW or ONRW and its watershed to maintain and protect existing water quality;
- The social and economic impact of Tier 2 ½ or 3 antidegradation protection;
- Public comments in support or opposition to the OIW or ONRW classification;
- The timing of the OIW or ONRW nomination relative to the triennial review of surface water quality standards;
- The consistency of an OIW or ONRW classification with applicable water quality management plans; and
- Whether the nominated surface water is located within a national or state park, national monument, national recreation area, wilderness area, riparian conservation area, wildlife management area, area of critical environmental concern, or has another special use.

The Department shall hold at least one public meeting in the local area of a nominated OIW or ONRW to solicit public comment. The nomination and all other information or input collected during the nomination and consideration process will be made part of the public record.

2 Iowa's Antidegradation Implementation Procedure

This portion of the document outlines the procedure for determining whether or not degradation is allowed in surface waters of the state from regulated activities. The antidegradation review procedure is based on:

- the level of protection (i.e., Tier 1, 2, 2 ½, or 3) assigned to the pollutants of concern within the water receiving the discharge,
- the type of receiving water,
- existing water quality of the receiving water,
- the necessity of degradation, and
- the social and economic importance of the proposed discharge.

All new or expanded regulated discharges are subject to antidegradation review requirements. Regulated activities include any activity that requires a permit or a water quality certification pursuant to federal law.

Tier 2 antidegradation reviews are required when proposed new or expanded discharges will degrade water quality. In addition to reviewing the necessity for a discharge and the social and economic importance of the discharging activity, the department and applicants must ensure that proposed discharges fully protect beneficial uses, and achieve the highest statutory and regulatory requirements (such as application of appropriate federal effluent limitation guidelines for certain industries, secondary treatment standards for domestic wastewater and appropriate water quality based effluent limitations, where appropriate). The department must also assure that activities within the watershed are implementing cost-effective, reasonable best management practices to control nonpoint source pollution. Determinations issued under these provisions must be made in accordance with the public notification process described in Section 4 of this document. A decision diagram of the antidegradation review process is provided as **Appendix A** of this document.

2.1 Relationship of Antidegradation to Beneficial Uses and Classifications

This antidegradation implementation procedure applies to all surface waters of the state regardless of use designations or water classification. Regardless of the level of review assigned, an antidegradation review must not result in the impairment of an existing or designated beneficial use.

Outstanding National Resource Waters and Outstanding Iowa Waters are antidegradation categories consistent with the implementation of the antidegradation policy in Chapter 61. These categories are separate and independent of designated and existing uses provisions as stated in the Code of Federal Regulations.

2.2 Determining the Appropriateness of Degradation

To determine the required scope of an antidegradation review, the department shall first determine whether or not the proposed new or expanded discharge will result in degradation for a pollutant of concern. Pollutants of concern for antidegradation reviews include those pollutants which are reasonably expected to be present in the discharge and may be reasonably expected to affect the beneficial uses. The permit applicant does not have to determine the assimilative capacity of the receiving water and, consequently, can proceed directly into defining the "necessity" (i.e., performing the alternatives analysis) of the discharge under Section 3 of this

document assuming (instead of demonstrating) that the proposed discharge will result in degradation for each of the pollutants of concern.

Antidegradation applies to any permitting action regarding a regulated discharge of a new or increased amount of a pollutant of concern.

A regulated activity shall not be considered to result in degradation, if:

- The proposed activity would not result in a permanent net increase in mass loading or ambient water quality concentration for a pollutant of concern after mixing; or
- The activity is occurring within the design capacity of the treatment plant as specified in the existing construction permit; or
- The activity will result in only temporary and limited degradation of water quality as defined in section 2.4; or
- A permit for an existing facility does not propose less stringent permit limits or increased treatment plant design capacity; or
- Additional treatment is added to an existing discharge and the facility retains their current permit limits and design capacity; or
- Treatment is added to a previously unpermitted discharge resulting in improvements to the receiving water, such as an unsewered community; or
- Combined sewer overflow (CSO) control projects resulting in a net decrease in the CSO-related pollutant loadings to surface waters shall be excluded from review requirements when these loadings are included in department-approved plans (e.g., Nine Minimum Controls, Long-Term Control Plan) in accordance with national guidance or policies; or
- The department concludes that the proposed activity will not cause degradation based upon the specifics of any watershed-based trading that has been agreed to by the project applicant. NOTE: Because Iowa does not currently have a watershed-based trading program in place, the applicant might experience some permitting delays in pursuing this exemption unless the department is given significant advanced notice of the applicant's proposal; or
- The activity is a thermal discharge that has been approved through a Clean Water Act 316(a) demonstration.
- The activity is a residual chlorine discharge that meets water quality criteria after mixing.

If a determination is made that degradation will occur, or it is assumed, the department will determine from information provided by the discharger, obtained from the public, or available to the department from its own sources, whether or not the degradation is necessary to allow important economical and social development in the geographical areas in which the waters are located (See Section 3 of this document).

2.3 Determining Existing Water Quality

Existing water quality determinations will primarily relate to Tier 2 ½ and Tier 3 reviews to determine the percent change in ambient conditions that may result from potential degradation. Also, the applicant can choose to determine existing water quality to determine if only Tier 1 review is necessary, however the department encourages the applicant to proceed directly into defining the "necessity" (i.e., performing the alternatives analysis) of the discharge under Section 3 of this document assuming (instead of demonstrating) that the proposed discharge will result in any degradation for each of the pollutants of concern.

Any applicant considering a new or expanded discharge to an OIW shall coordinate any planning effort to determine the existing water quality with the department. The department will provide the necessary guidelines and steps for an appropriate, scientifically defensible determination.

Existing water quality either:

- provides confirmation that the water quality for a pollutant of concern is at or violating the Water Quality Standard and therefore justifies a Tier 1 review, or

- serves as the yardstick by which available assimilative capacity is measured for the pollutants of concern to receive a Tier 2 review.

In general, existing water quality will be based upon existing assessments conducted under the current department monitoring and assessment programs. Existing water quality assessments will seek to gather information only on the pollutants reasonably expected to be in discharges.

The preferred approach for assessing existing water quality is to use previously collected data where available or presume default background levels. Where adequate data are not available, the second preferred approach is to collect water quality data. The third preferred approach for assessing existing water quality is to use appropriate reference data where it can be shown that the reference data is likely to reflect conditions in the water body in question. Sometimes more than one approach may be needed to characterize existing water quality for all pollutants of concern.

The department can advise the applicant on what approaches may be most appropriate to establish the existing water quality. If a data collection effort is chosen, the department can advise the applicant on what data are needed and can provide guidance on how to collect and report the needed information to the department.

2.4 Temporary and Limited Degradation

Activities resulting in temporary and limited degradation will be given a Tier 1 review. The department will determine if degradation from a discharge qualifies as temporary and limited following a review of information provided by the applicant. The information provided by the applicant must include:

a) length of time during which water quality will be lowered,
b) percent change in ambient conditions,
c) parameters affected,
d) likelihood for long-term water quality benefits to the segment (e.g., as may result from dredging of contaminated sediments),
e) degree to which achieving the applicable Water Quality Standards during the proposed activity may be at risk, and

f) potential for any residual long-term influences on existing uses.

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3 Pollution Control Alternatives to Degradation

An applicant proposing any new or expanded discharge that would degrade water quality is required to prepare an evaluation of alternatives to the proposed discharge. The purpose of this evaluation is to determine whether or not the proposed discharge is *"necessary," that is, no reasonable alternative(s) exist to prevent degradation.* These alternatives are compared (in terms of practicability, economic efficiency and affordability) to the controls required to protect existing uses and to achieve the highest statutory and regulatory requirements (i.e., the more stringent between the water quality-based effluent limits to protect an existing use and the applicable technology-based effluent limits).

Following the analysis of pollution control alternatives, the alternative that is the most practicable, economically efficient, and affordable should be considered the preferred pollution control alternative. If this alternative results in degradation, the applicant must then document the social and economic importance (SEI) of the discharge according to the guidelines in Section 3.3 of this document.

3.1 Identifying Non-Degrading and Less-Degrading Pollution Control Measures

For any proposed discharge, there may be a number of pollution control measures that prevent or minimize water quality degradation. For discharges likely to cause degradation, applicants must provide an analysis of non-degrading and less-degrading alternatives to the minimum level of pollution control. The minimum level of pollution control is the control required to protect existing uses and to achieve the highest statutory and regulatory requirements.

The applicant shall evaluate a range of non-degrading or less-degrading pollution control alternatives with the intent of identifying reliable, demonstrated processes or practices that can be reasonably expected to achieve greater pollution reduction. The following alternatives are examples that may be considered depending upon applicability:

- Land application
- Subsurface irrigation
- Waste transport
- Groundwater recharge
- Improvements in the collection system
- Recycling or reuse (i.e., closed loop system)
- Discharge to a regional wastewater collection and treatment system
- Improved operation and maintenance of existing treatment system
- Alternative discharge locations
- Installation of biological/physical/chemical treatment processes that provide higher levels of treatment
- Seasonal or controlled discharges to avoid critical water quality periods

If experimental or unproven methods are proposed, the department may request information on previous applications of the method, effectiveness, transferability (if applicable), costs and other information as appropriate. Applications containing proposals for new or experimental methods will be required to append information regarding likely performance results. Such applications may be approved at the discretion of the department with the condition that if the proposed

technology does not meet project pollutant control targets, the applicant must adopt conventional or other pollution control measures that meet state antidegradation requirements.

The department may require that the applicant analyze additional alternatives if an appropriate range of alternatives were not evaluated. The department staff and the applicant should meet to discuss these and other issues early in the process. The applicant shall also document any less-degrading alternatives that were determined to be unreasonable and provide a basis for the conclusion.

3.2 Evaluating and Selecting Alternatives

Following the evaluation of possible alternatives, the applicant must provide a basis for selecting the most reasonable alternative. A reasonable alternative is one that is practicable, economically efficient, and affordable.

Practicability

The practicability of alternatives is considered by evaluating the effectiveness, reliability, and potential impacts on the overall natural environment (i.e., land, air, water and energy use) resulting from implementation of the alternatives. Non-degrading and less-degrading alternatives shall be considered practicable unless an evaluation to the contrary is provided. The following are examples of the factors that may be evaluated during this process:

1) Effectiveness and Reliability

• Certainty of achieving technology-based requirements and water quality criteria to protect existing uses
• Technical feasibility of alternatives (e.g., no-discharge of large discharges within dense urban areas)
• System or technology reliability, potential for upsets/accidents
• Nature of pollutants discharged
• Discharge timing and duration
• Need for low-flow augmentation
• Dilution ratio for pollutants discharged

2) Potential Environmental Impacts

• Sensitivity of stream uses
• Sensitivity of groundwater uses in the area
• Effect on endangered species
• Potential to generate secondary water quality impacts (storm water, hydrology)
• Secondary pollutants created by products of treatment

Review of these factors might be on a qualitative or quantitative basis, as appropriate. Other secondary environmental impacts should also be considered, such as the potential impact of alternatives on odor, noise, energy consumption, air emissions, solid waste and sludge generation. Other practicability factors that should be considered during the review include the technical, legal, and local considerations of the various alternatives examined. The schedule and the estimated time of completion of the project should also be provided for each alternative discussed.

Economic Efficiency

Alternatives that are deemed practicable must undergo a direct cost comparison and alternatives that impose a cost that is disproportionate to the possible environmental gain may be eliminated as impracticable. An analysis of pollution control costs, or economic efficiency, is appropriate when the applicant desires to optimize the balance between water quality benefits and project costs. General cost categories that should be considered include:

- Capital costs
- Annual operating and maintenance costs (including cost escalation)
- Other costs (one-time costs, savings, opportunity cost, salvage value)

Opportunity costs may be considered in the estimate of overall cost, as appropriate. For example, lost opportunity costs for lots in a proposed subdivision that would be used for land application rather than housing, or losses related to process changes that results in missed production runs are legitimate and may be considered if adequately documented.

In order to develop a standardized framework for projecting, evaluating, and comparing costs associated with various pollution control alternatives, applicants should use a present worth framework for reporting cost information. However, applicants may propose alternate economic demonstrations if appropriate. Alternative direct cost comparisons may be presented if the present worth calculation is complicated by the amount of difference in the effective design lives of the alternatives examined. The following calculation may be used to determine present worth:

$P = C + O + [A * P/A, d, n)] – S$

Where:
P = Present worth
C = Capital cost
O = Other costs (expressed as present worth)
A = Average annual operating cost (alternatively a gradient factor may be applied to account for cost escalation)
d = Discount rate
n = Useful life
S = Salvage value of facilities and land (expressed as net worth)
$(P/A, d, n) = \text{Equal series present worth factor} = [(1 + d)n – 1] / [1 + d)n]$

The cost of each alternative is then compared to the base cost of pollution control. The base cost of pollution control is the cost of the controls required to protect existing uses and to achieve the highest statutory and regulatory requirements, i.e., the more stringent of water quality based effluent limits for existing use protection or technology-based effluent limits.

As a *non-binding guideline,* alternatives less than 115 percent of the base cost of pollution control measures are presumed to be economically efficient. Alternatives greater than 115 percent of the base costs should also be considered if implementation of the alternative would produce a substantial improvement in the resulting discharge. Conditions that might warrant consideration of alternatives of greater cost (above 115 percent) are the effectiveness, reliability, and environmental factors identified above.

Applicants performing the direct cost comparison approach should evaluate the economic efficiency of the treatment options for each of the primary pollutants of concern related to the

proposed discharge. For example, the primary pollutants of concern for domestic wastewater discharges include biochemical oxygen demand (influencing in-stream dissolved oxygen concentration), ammonia, bacteria, and other pollutants for which a wasteload allocation can be reasonably determined. An applicant may need to evaluate the costs associated with one pollutant of concern if additional treatment process alternatives do not effect treatment for other pollutants of concern. An applicant can bypass the cost comparison step by choosing to implement the least degrading alternative for each pollutant of concern.

This quantitative water quality analysis is not needed when the receiving water quality is not a significant factor for a specific alternative (e.g., in-stream dissolved oxygen concentrations in relation to a no-discharge alternative). Since all alternatives analyses use qualitative and quantitative assessments of water quality benefits and treatment costs and feasibility, best professional judgment is of the utmost importance when evaluating alternatives.

Affordability

Following an analysis of practicability and economic efficiency, the affordability of the least degrading alternative may be assessed at the applicant's discretion. This assessment may be used to determine if the alternative is too expensive to reasonably implement. This approach results in the selection of the least degrading alternative, while maintaining affordability to the public or private entity. *Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis.*

The determination of affordability for public and private entities is an emerging issue nationally. As such, federal guidance has not yet been finalized. Until such time, the applicant should use the U.S. Environmental Protection Agency's water quality standards handbook – "*Interim Economic Guidance for Water Quality Standards*," EPA-823-B-95-002 (1995). This guidance document presents one set of public and private sector approaches which consider the absolute value of the alternative rather than through cost comparisons. This interim guidance is not binding and may be replaced or supplemented with other methods of analysis, if sufficiently justified.

If the applicant determines that the most efficient alternative is affordable, then it is the preferred alternative. If the most efficient alternative is not affordable, then the affordability of the next most efficient alternative should be evaluated until an alternative is chosen that is practical, economically efficient and affordable.

3.3 Determining Social and Economic Importance of the Preferred Alternative

If the preferred alternative identified will result in degradation to the receiving waters, then the applicant must demonstrate that the preferred alternative (or "project") will allow important economic and social development. **Social and Economic Importance** is defined as the social and economic benefits to the community that will occur from any activity resulting in a new or expanded discharge. The applicant should use the following three steps to demonstrate the SEI:

- Identify the affected community
- Identify relevant factors that characterize the social and economic conditions of the affected community
- Describe the important social and economic development associated with the project

1. Identify the affected community:
The affected community is considered as the community in the geographical area in which the waters are located. The affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project.

2. Identify relevant factors that characterize the social and economic conditions of the affected community:
In order to describe the economic and social development associated with the proposed project, the applicant will first need to determine the social and economic factors that best characterize the affected community. Examples of social and economic factors include:

• Rate of employment
• Personal or household income
• Poverty level
• Population trends
• Increasing production
• Housing starts, median values, etc.
• Ccommunity tax base
• Available public services (e.g., fire department, school, infrastructure)
• Current or potential public health, safety or environmental problems

The social and economic measures identified above do not constitute a comprehensive list. Each situation and community is different and will require an analysis of unique social and economic factors. The applicant is encouraged to consider analyzing additional factors that characterize the specific community under consideration.

3. Describe the important social and economic development associated with the project:
Following the identification of appropriate social and economic measures, the applicant must describe the expected change in these factors that is associated with the project. The purpose of this step is to demonstrate whether or not important social and economic development will result from the project. The applicant should first describe the existing condition of the affected community. This base condition should then be compared to the predicted change (benefit or loss) in social and economic condition after the discharge is allowed. The area's use or dependence upon the water resource affected by the proposed discharge must be included in the analysis. In doing so, the applicant shall evaluate any associated environmental related benefits or costs, such as:

• Promoting/impacting fishing, recreation, tourism or other economic benefits for the community
• Reserving assimilative capacity for future industry and development

Upon the consideration of all relevant factors, the project constitutes important social and economic development if the applicant demonstrates that the project will lead to overall beneficial changes in the factors presented (i.e., increased jobs, employment, housing or other appropriate factors balanced against the benefits associated with maintaining a higher level of water quality). This determination will be made on a case-by-case basis using information provided with the application and/or obtained from the public.

When information available to the department is not sufficient to make a determination regarding the social and economic benefits or environmental impacts associated with the proposed activity, the department may request that the applicant submit additional information.

If the department determines, after appropriate discussions with the discharger, that either the SEI of the proposed project has not been demonstrated the department shall deny the proposed activity. This decision is part of the Administrative Record of Decisions regarding antidegradation.

3.4 Summary of the Alternatives Analysis and Social and Economic Importance Process

The preceding discussion describes the approach that shall be followed by the applicant for determining whether or not less- or non-degrading alternatives to the proposed discharge will be required to prevent degradation of Iowa surface waters. The following steps summarize the alternatives analysis process and other relevant actions during antidegradation reviews for Tier 2 protection levels:

- If it is determined that degradation would likely occur due to the proposed discharge, an analysis of less degrading or non-degrading alternatives to the proposed discharge will be required.

- The applicant will be required to analyze cost information for base pollution control measures associated with the proposed discharge, alternative pollution control measures that would result in no degradation, and for other less or non-degrading alternatives as appropriate.

- The applicant shall evaluate the proposed discharge, the less and non-degrading alternatives, and the practicability, economic efficiency and affordability associated with each option or mix of options.

- The applicant shall identify the least degrading alternative – or mix of alternatives – that is practicable, economically efficient, and affordable as described in this section. This will be the preferred option.

- If the preferred option (i.e., pollution control alternative or mix of alternatives) will not result in degradation of the receiving water segment, permitting of the discharge may proceed.

- If the preferred option (i.e., pollution control alternative or mix of alternatives) will result in degradation of the receiving water, the applicant will be required to conduct an analysis of economic and social benefits.

4 Public and Interagency Participation in Antidegradation Reviews

Public participation is a component of the antidegradation review process. Public notice of antidegradation review findings, solicitations of public comment and maintenance of antidegradation review documents as part of the public record help ensure that interested parties can be engaged and involved throughout the review process. In addition, intergovernmental coordination and review is required prior to any action that allows degradation of water quality in a surface water afforded a Tier 2 review.

This section outlines the public participation *and* the intergovernmental coordination and review requirements. The processes for both must follow existing state rules regarding public notice, response to comments and maintenance of records.

4.1 Public Notification Requirements

The applicant will provide public notice and opportunity for public comment on the alternatives analysis and the social and economic importance review.

Before the alternatives analysis is finalized, a public notice should be issued by the applicant. The public notice will include a notice of availability of:

- determination of projected impacts on existing water quality;
- findings and determinations from the alternatives analysis,
- the conclusions of any social and economic evaluation of the proposed activity, where necessary; and
- a description of the surface water that is subject to the antidegradation review.

The public notice must be provided through the appropriate legal advertisement in a qualified newspaper with the largest circulation for the county where the discharge will occur. The notice will identify the action being considered, list all beneficial uses identified for the surface water and call for comments from the public regarding the proposed discharge.

4.2 Intergovernmental Coordination and Review

Intergovernmental coordination is required prior to approving a regulated activity that would degrade a surface water. This requirement seeks to ensure that all relevant public entities at the local, state and federal levels are aware of any proposal to degrade water quality and are provided with an opportunity to review, seek additional information and comment on the proposal. The intergovernmental coordination and review process occurs prior to finalizing the alternatives analysis and social and economic importance review and may occur in tandem with public notice procedures outlined in the previous section. The time period afforded to commenting agencies will be consistent with the requirements for submission of public comments.

Agencies will have access to summary information on the proposed activity, the receiving water segment, the existing water quality of the receiving water segment, the pollutants of concern, the tier category, estimated amount of degradation to the receiving waters, the treatment alternatives reviewed and the social and economic importance of the proposed activity.

4.3 Public Participation and Interagency Contacts

Public participation and interagency coordination will follow IAC 567-64.5(2), which pertains to public notice requirements for NPDES Permits. IAC 567-64.5(2)a(1) through (3) and IAC 567-64.5(4) require that a copy of the public of the availability of the draft permit (which contains the antidegradation review) be sent to interested and potentially interested persons and other government agencies, including:

- the NPDES permit applicant or permittee;
- EPA Region VII;
- U.S. Fish & Wildlife Service;
- the regional Iowa DNR Field Office;
- any applicable industrial contributor to the privately owned treatment works;
- the county department of environmental health or comparable department in the county to which the facility discharges;
- Any other state whose waters may be affected by the issuance of the permit; and
- Any interested person or organization upon request.

5 Antidegradation Review Decisions

Once the intergovernmental coordination and public notice requirements outlined above are satisfied, the applicant shall submit the alternatives analysis, the social and economic importance review, and the results of the public comment and intergovernmental review process to the department.

Regulated activities that may result in degradation of waters can only be approved after the department makes all of the following findings:

- The level of water quality necessary to protect applicable beneficial uses is fully maintained. Water quality shall not be degraded to a level that does not comply with the applicable Water Quality Standards (WQS).
- The highest statutory and regulatory requirements for new and existing point sources are achieved.
- All cost-effective and reasonable BMPs for nonpoint source pollution control are implemented.
- Allowing degradation of water quality is necessary and accommodates important economic or social development in the area where the surface water is located.

The department shall then make a final determination concerning the proposed activity. If the antidegradation review is accepted, implementation of the preferred alternative will be required in the permit. When information submitted to the department is not sufficient to approve the proposed activity, the department may request additional information.

All determinations, including determinations to deny the activity shall be documented by the department and made part of the Administrative Record of Decisions. *Review documents, including existing water quality assessments, determination of degradation, analysis of public comments, alternatives analyses, demonstration of social and economic importance and any other decisions or findings, will be made available to the public.*

The department's final decision on a permit may be appealed pursuant to IAC Chapter 561-7, as adopted by reference at 567 IAC 7.1.

To the extent Iowa's statutes allow, any information submitted pursuant to the "Iowa Antidegradation Implementation Procedure" or other rules of the Environmental Protection Commission that contains confidential business information shall be kept confidential by the commission and employees and agents of the department if a timely request for confidentiality is made pursuant to IAC Chapter 561-2, as adopted by reference at 567 IAC 2.1, by the person submitting the information and such request is approved by the Department.

6 Permit Considerations

Because the permit effluent limits have a significant impact on the treatment processes, it is important that the department be notified early as to the nature of the discharge, the discharge location and effluent characteristics. Developing permit effluent limits requires collection of a considerable amount of information on the receiving water, the applicant's discharge and other activities in the drainage area. Early notification will ensure that the information collection process begins well before the applicant needs a permit to conduct planning activities, design facilities or proceed with project construction. In cases where the applicant intends to collect water quality data in preparation for an antidegradation review, the department recommends that the applicant meet with the department in a pre-application conference at least one year prior to the expected date of permit issuance.

Early notification and consultation between the applicant and the department will help ensure that the permitting process proceeds efficiently. Regulated activities that may temporarily degrade waters protected at the Tier 2 ½ & 3 level must comply with the antidegradation requirements applicable to that review level (i.e., provide proof that the degradation is only temporary and limited) before a permit will be granted. *Any discharge to an Outstanding National Resource Water or Outstanding State Resource Water will require a site-specific permit or individual §401 certification to ensure that impacts will be temporary and limited and that the public can participate in the decision.*

6.1 General Permits

A number of discharges to surface waters are authorized under general NPDES permits issued by department. These include storm water runoff from municipalities, industrial activities covered by the storm water program, mining and processing facilities, private on-site WW treatment systems and construction sites one acre or larger.

Except as described below, regulated discharges authorized by general permits are not required to undergo a Tier 2 antidegradation review as part of the Notice of Intent process. However, new and reissued general permits must be evaluated to consider the potential for degradation as a result of the permitted discharges.

All NPDES general permits require that permit conditions be met, including the general requirement that permitted discharges must ensure that water quality standards are not violated and best management practices contained in the permit are implemented. Compliance with the terms of the general permits issued by the department is required to maintain authorization to discharge under the general permit. Discharges covered by a general permit that cannot comply with general permit conditions or antidegradation requirements will be required to seek coverage under an individual permit. The following sections describe the general antidegradation implementation provisions for various types of activities covered by general permits.

Overview of the Antidegradation Review Procedure for General Permits

Antidegradation reviews for discharges authorized by general permits will occur for the entire class of general permittees when the general permit is issued. Antidegradation reviews will focus on pollutants of concern that may contribute to a water quality impairment.

Regulated discharges authorized by general NPDES permits may be subject to a full antidegradation review if the Director determines that cumulative degradation resulting from

multiple discharges within a watershed, degradation from a single discharge over time, or other individual circumstances warrant a full antidegradation review at the time the general permit is issued.

Certain general permit programs are now being implemented, such as storm water from construction activities. Information regarding the existence, effectiveness, or costs of control practices for controlling flows, reducing pollution, and meeting the water quality and antidegradation requirements of these programs is emerging. For permittees covered under general permits, the antidegradation requirements of this section can be considered met for permits and programs that have a formal process to select, develop, adopt, and refine control practices (i.e., design, installation, and maintenance) for protecting water quality. This adaptive management process must ensure that information is developed and used to revise permit or program requirements.

6.2 Site-Specific Permits

Following the effective date of this document, all applications for new or expanded wastewater permits, except for permits issued to non-discharging facilities, shall undergo an antidegradation review if degradation is likely in the receiving water or downstream waters. In these cases, site-specific permit effluent limits will be based upon applicable effluent guidelines, the characteristics of the discharge and the cumulative effects and the alternatives analysis. In addition, the permit effluent limits must ensure that beneficial uses are maintained and protected in the receiving waters and downstream waters.

Applicants seeking site-specific permit coverage may be required to provide or collect existing water quality information on any pollutants of concern reasonably expected to be in the discharge, if that information is not already available. Data collection requirements may depend on the nature of the proposed discharge and the pollutants reasonably expected in the discharge.

6.3 §401 Certifications

Section 404 of the Clean Water Act regulates the placement of dredged or fill material into the "waters of the United States," including small streams and wetlands adjacent or connected to "waters of the United States." The U.S. Army Corps of Engineers (Corps) administers the §404 permit program dealing with these activities (e.g., wetland fills, in-stream sand/gravel work, etc.) in cooperation with the EPA and in consultation with other public agencies.

In order to ensure that antidegradation and other water quality protection requirements are considered, reviewed and met in a comprehensive and efficient manner, these requirements will be addressed and implemented through the permitting and §401 water quality certification processes. Under this approach, applicants who fulfill the terms and conditions of applicable §404 permits and the terms and conditions of the corresponding §401 water quality certification will have fulfilled the antidegradation requirements. Additional antidegradation considerations may be incorporated into §404 permits and the corresponding §401 certifications at the time of permit issuance.

For minor activities covered under §404 general permits (e.g., road culvert installation, utility line activities, bank stabilization, etc.), antidegradation requirements will be deemed to be met if all appropriate and reasonable BMPs related to erosion and sediment control, project stabilization and prevention of water quality degradation (e.g., preserving vegetation, stream bank stability and basic drainage) are applied and maintained. Applicants desiring to fulfill antidegradation review

requirements under this approach will be responsible for ensuring that permit requirements and relevant water quality certification conditions are met.

Iowa manages its §401 water quality certification program to ensure that the placement of dredged or fill material into surface waters do not create any unmitigated water quality impairments or significant degradation of surface waters. Under the BMP-based approach adopted by Iowa, regulated activities for which mitigation has been certified by the state pursuant to §401 of the Clean Water Act will not be required to undergo a separate Tier 2 review in accordance with this document.

Those activities conducted in compliance with Section 404(f) of the Clean Water Act as interpreted by the Environmental Protection Agency and United States Army Corps of Engineers will be deemed to be in compliance with this State's antidegradation policy.

6.4 Activities Covered by NPDES Storm Water Permits

Urban areas with populations greater than 100,000 based on the 1990 census (Phase I MS4 communities) were required to apply for an individual NPDES storm water permit. Many urban areas with populations less than 100,000 determined from 2000 census data are considered Phase II MS4 communities. Storm water discharges from Phase II MS4s are authorized by individual storm water permits. However, neither Phase I or Phase II MS4s authorized under individual storm water permits are required to meet the same antidegradation requirements that apply to other individual NPDES permits outlined above.

Antidegradation reviews for individual NPDES storm water permits will be based on an adaptive management approach. This approach may include routine monitoring of storm water quality at representative outfalls to adequately characterize storm water discharges. The MS4 will then evaluate, through effectiveness monitoring, whether storm water quality is being maintained, improving, or degrading and whether BMPs identified in the MS4’s storm water pollution prevention plan are effective at controlling the discharge of pollutants. Future antidegradation review of individual NPDES storm water permits will consist of an analysis of the effectiveness of the BMPs and compliance with the requirements of the storm water permit.

7 Monitoring, Assessment, & TMDL Considerations

7.1 Data Collection and Evaluation

Data gathered during the department's regular monitoring and assessment efforts shall be evaluated in accordance with the level of tier review designated to the waters. Data gathered on a water being given a Tier 1 review shall be assessed for compliance with the narrative and numeric Water Quality Standards (WQS). Waters receiving Tier 2 ½ or 3 review shall be assessed against the existing water quality data or other appropriate reference stream data. Waters receiving Tier 2 review shall be assessed against existing water quality data or other appropriate stream data unless degradation has been authorized since the existing water quality data was collected. Assessments on waters that have undergone authorized degradation shall be assessed against the level of water quality that was predicted and documented in the Administrative Record of Decisions regarding antidegradation when the degradation was authorized. Such assessments shall be made on the same pollutant-by-pollutant basis, as authorized by the antidegradation review.

7.2 Applicability to §305(b) Report and §303(d) List

Section 305(b) of the Clean Water Act requires each state to prepare and submit to EPA a biennial report describing water quality of all surface waters in the state. Each state must monitor water quality and review available data to determine if the Water Quality Standards are being met. From this review, waters that do not meet WQS are identified. These waters are known as impaired waters. Those impaired waters that are impaired by a discrete pollutant or chemical condition, do not yet have sufficient water quality protection measures in place, and do not yet have an approved TMDL are used to form the §303(d) list. Identification of a surface water as impaired may be based on a violation of a numeric or narrative WQS.

To coordinate antidegradation reviews with the §305(b) and §303(d) listing process, the department will implement the following procedures:

• Tier 1 Protection (applicable to all waters):

No further degradation of existing water quality for a pollutant of concern is allowed in a surface water where the existing water quality for the pollutant of concern does not meet the applicable WQS. Impaired waters are identified on Iowa's §303(d) List and targeted for future Total Maximum Daily Load (TMDL) development.

• Tier 2 Protection:

If performed properly, Tier 2 reviews will not result in degradation sufficient to cause designated use impairment. If a §305(b) water quality assessment shows that significant degradation of a surface water is occurring, and that the Water Quality Standards might be violated over time, the department may conduct a special study of the extent and source(s) of degradation to determine the cause for the trend and identify appropriate antidegradation actions to reverse any preventable trends.

The plan may include providing technical and other assistance to address probable sources of degradation and implement appropriate management practices. Other possible options include awarding priority points for grant or other funding programs targeted at water quality protection,

amending permits or water quality certification conditions and working with stakeholders to support actions needed to protect and restore water quality.

• Tier 2 ½ & 3 Protection:

No degradation, except for temporary degradation, is allowed in the unique waters afforded Tier 2 ½* & 3 protection. If a §305(b) assessment shows that long-term degradation (i.e., not temporary degradation) of an Outstanding National Resource Water or Outstanding Iowa Water is occurring, the department may conduct a special study of the extent and source(s) of degradation to determine likely trends and explore possible antidegradation actions needed to reverse the trend, similar to what was described for ensuring Tier 2 protection.

*Tier 2 ½ has an exemption to allow for new or increased discharges where it serves to enhance the resource.

7.3 Applicability to Total Maximum Daily Loads

The department is required to develop Total Maximum Daily Loads (TMDLs) for the restoration of impaired waters. When developing these TMDLs, the department shall allocate pollution loads in accordance with the level of tier review designated to the pollutant of concern. TMDLs developed for Tier 1 protection shall be designed to achieve compliance with the water quality criteria (WQC). TMDLs on waters receiving Tier 3 protection shall be designed to meet appropriate reference stream quality. TMDLs on pollutants of concern receiving Tier 2 review shall be designed to meet the water's existing water quality data or other appropriate stream quality unless degradation has been authorized since the existing water quality data were collected. TMDLs on waters that have undergone authorized degradation shall be developed for the level of water quality that was predicted and documented in the Administrative Record of Decisions regarding antidegradation when the degradation was authorized. Such TMDLs shall be made on the same pollutant-by-pollutant basis, as authorized by the antidegradation review.

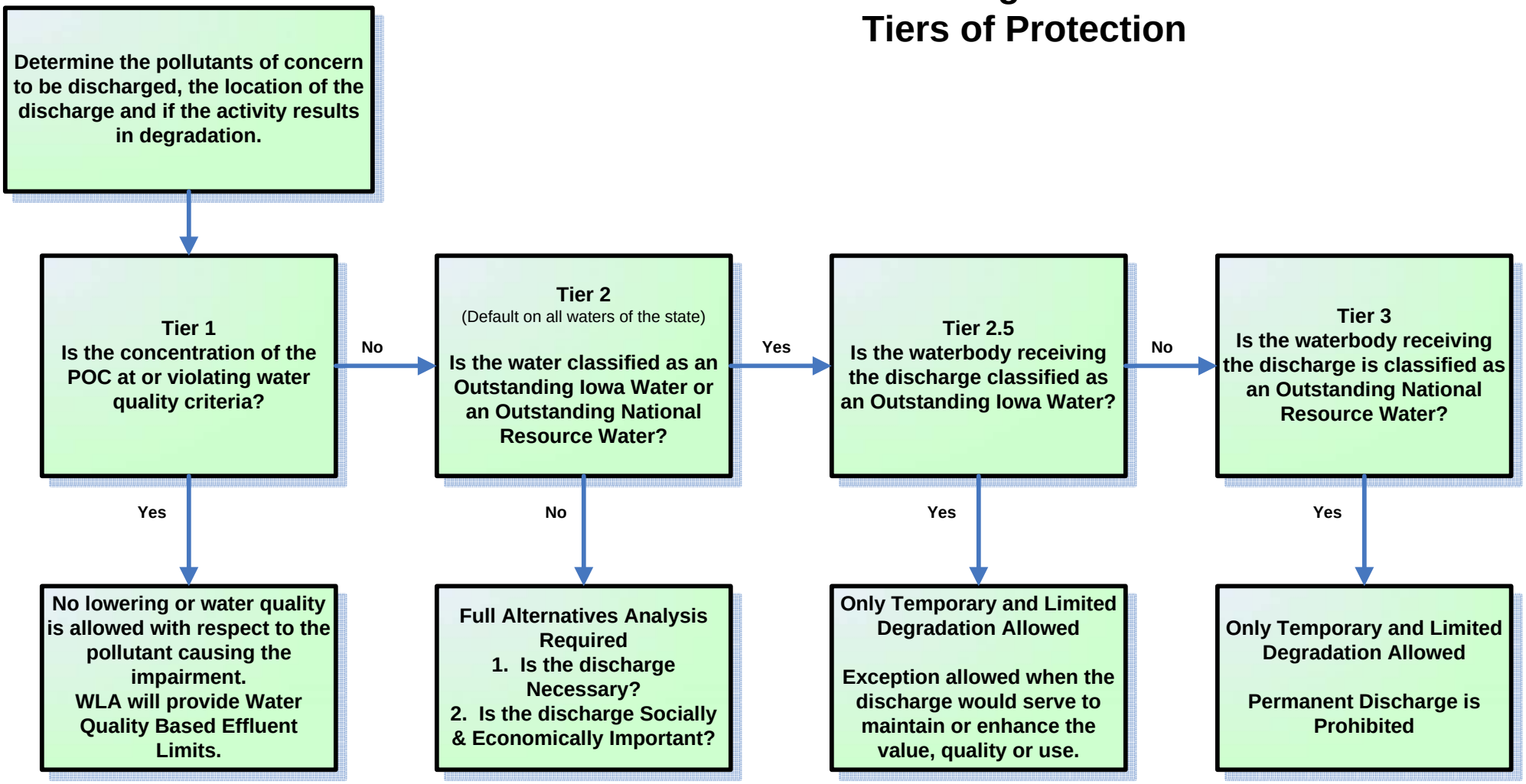
8 Implementation of Controls for Nonpoint Pollution Sources

Anti-degradation review applies only to activities that requires a permit or a water quality certification pursuant to federal law (CWA § 402 NPDES permits, CWA § 404 dredge and fill permits, and any activity requiring a CWA § 401 certification). Nonpoint discharges do not currently require a permit pursuant to these federal provision or Iowa law. States may adopt regulatory programs to address nonpoint sources of pollution. Unless Iowa imposes a regulatory framework upon nonpoint sources of water pollution there is no mechanism available for the imposition of antidegradation review in regard to these discharges and such review can not occur.

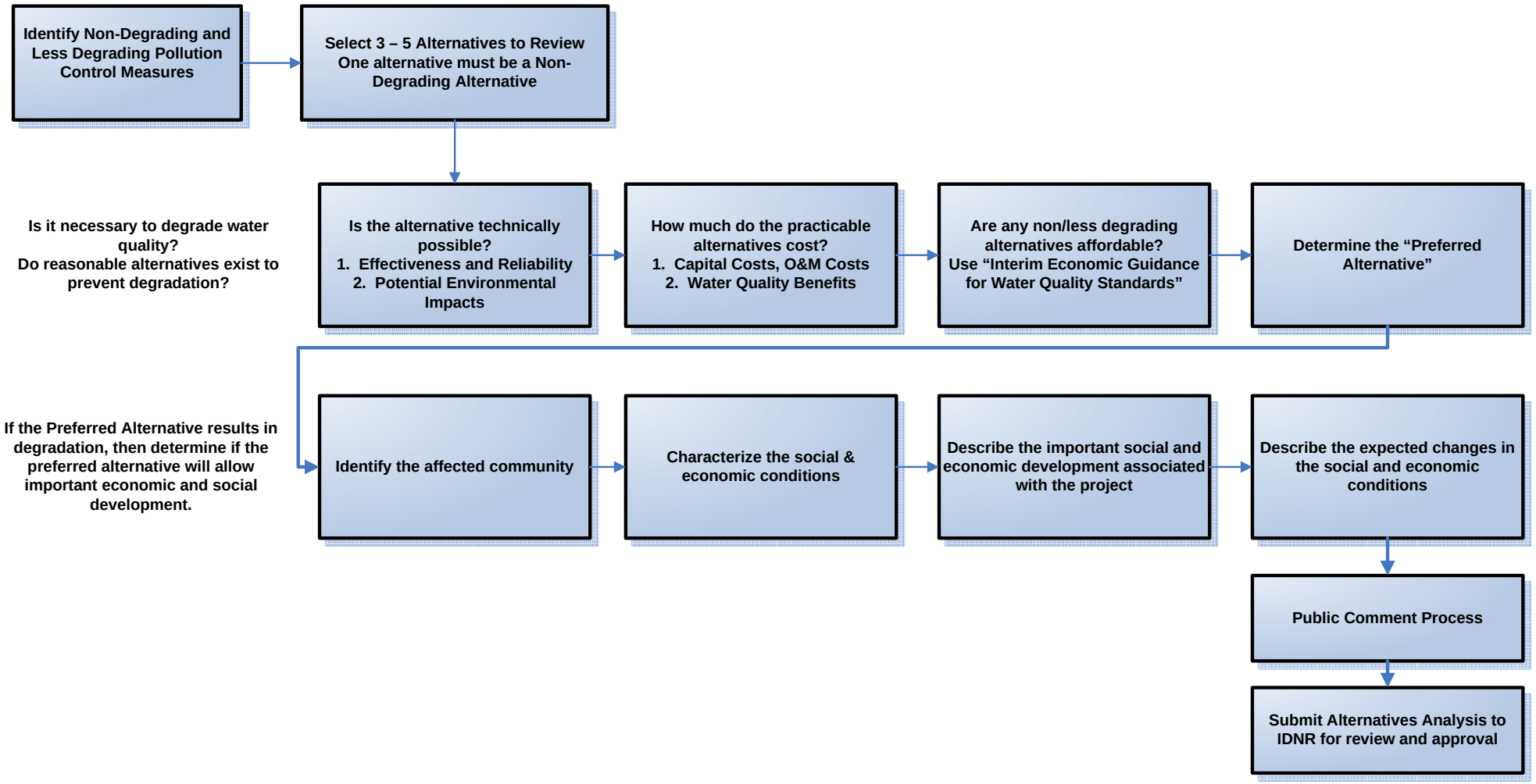
When applying Tier 2 review to a proposed regulated activity the department shall assure the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality. To the extent that existing programs establish best management practice requirements for entities contributing to nonpoint pollution those requirements establish the maximum regulatory requirements that can be required pursuant to rule 61.2“b” and 40 CFR 131.12(a)(2). In many cases the Department lacks the authority to require entities that contribute to nonpoint pollution to implement all cost-effective and reasonable best management practices. In either situation, additional best management practices or regulatory requirements must be imposed through modification of statutes or rules outside of the antidegradation review.

Appendix A Antidegradation Review Flow Charts

Antidegradation Tiers of Protection



Alternatives Analysis



Appendix B – Outstanding Iowa Waters

STREAMS	DESCRIPTION	Length (Miles)
Baron Spring	Mouth (S2, T91N, R6W, Clayton Co.) to spring source (S4, T91N, R6W, Clayton Co.)	1.99
Bear Creek	Confluence with N. Bear Cr. (S25, T100N, R7W, Winneshiek Co.) to spring source (Mestad Spring) (S29, T100N, R7W, Winneshiek Co.)	4.97
Bear Creek	Mouth (S8, T92N, R7W, Fayette Co.) to W. line of S6, T92N, R7W, Fayette Co.	3.94
Bohemian Creek	Mouth (Winneshiek Co.) to Howard Co. Rd. V58 (W. line of S2, T97N, R11W, Howard Co.)	12.58
Brush Creek	N. line of S23, T85N, R3E, Jackson Co. to N. line of S1, T85N, R3E, Jackson Co.	5.82
Buck Creek	Mouth (S29, T93N, R2W, Clayton Co.) to W. line of S9, T93N, R3W, Clayton Co.	13.26
Canoe Creek	Winneshiek Co. Rd. W38 to W. line of Section 8, T99N, R8W, Winneshiek Co.	7.34
Clear Creek	Mouth (Allamakee Co.) to W. line of Section 25, T99N, R4W, Allamakee Co.	3.79
Coon Creek	Mouth (Winneshiek Co.) to rd. crossing in S13, T98N, R7W, Winneshiek Co.	3.22
Ensign Creek (aka Ensign Hollow)	Mouth (S28, T92N, R6W, Clayton Co.) to spring source (S29, T92N, R6W, Clayton Co.)	1.05
Fenchel Creek (a.k.a. Richmond Springs)	Mouth (S5, T90N, R6W, Delaware Co.) to Richmond Springs (Center of S4, T90N, R6W, Delaware Co.)	1.26
Fountain Spring Creek (aka Odell Br.)	Mouth (SE1/4, S10, T90N, R4W, Delaware Co.) to W. line of NW1/4, S16, T90N, R4W, Delaware Co.	2.82
French Creek	Mouth (Allamakee Co.) to E. line of Section 23, T99N, R5W, Allamakee Co.	5.58
Grannis Creek	Mouth (S30, T95N, R7W, Fayette Co.) to W. line of S36, T93N, R8W, Fayette Co.	3.56
Hickory Creek	Mouth (Allamakee Co.) to S. line of S28, T96N, R5W, Allamakee Co.	3.24
Little Mill Creek	Mouth (Jackson Co.) to W. line of S29, T86N, R4E, Jackson Co.	6.74
Little Paint Creek	Mouth to N. line of Section 30, T97N, R3W	1.92
Little Turkey River	Clayton-Delaware Co. line to S. line of S11, T90N, R3W, Delaware Co.	3.25
Maquoketa River	Confluence with South Fork Maquoketa River (S16, T90N, R6W, Delaware Co.) to Hwy 3(N. Line S24, T91N, R7W, Fayette Co.).	8.61
Middle Fork Little Maquoketa River	W. line of S31, T90N, R1E, Dubuque Co. to N. line of S33, T90N, R1W, Dubuque Co.	4.94
Mill Creek (aka Big Mill Creek)	Confluence with Little Mill Cr. to confluence with Unnamed Cr. (S1, T86N, R3E, Jackson Co.)	8.04
Mink Creek	Mouth (S30, T93N, R6W, Clayton Co.) to W. line of S15, T93N, R7W, Fayette Co.	5.94
Nichols Creek (aka Bigalk Cr.)	Mouth (S18, T100N, R10W, Winneshiek Co.) to W. line of S23, T100N, R11W, Howard Co.	4.18
North Bear Creek	Mouth (S25, T100N, R7W, Winneshiek Co.) to Iowa-Minnesota state line	6.39
North Cedar Creek	Mouth (S8, T94N, R3W, Clayton Co.) to W. line of S24, T94N, R4W, Clayton Co.	4.62
Otter Creek	Mouth (Fayette Co.) to confluence with Unnamed Cr. (a.k.a. Glovers Cr., S22, T94N, R8W, Fayette Co.)	10.89
Paint Creek	Little Paint Cr. to Rd. crossing, S18, T97N, R4W, Allamakee Co.	12.37
Patterson Creek	Mouth (Allamakee Co.) to E. line of S3, T98N, R6W, Allamakee Co.	4.85
Ram Hollow	Mouth (S11, T90N, R3W, Clayton Co.) to spring source (S10, T90N, R3W, Delaware Co.)	0.66
Silver Creek	Mouth (S4, T99N, R5W, Allamakee Co.) to S. line of S31, T99N, R5W, Allamakee Co.	8.31
Smith Creek (aka Trout River)	Mouth (S21, T98N, R7W, Winneshiek Co.) to S. line of S33, T98N, R7W, Winneshiek Co.	3.42
Sny Magill Creek	Mouth (S23, T94N, R3W, Clayton Co.) to W. line of S6, T94N, R3W, Clayton Co.)	7.57
Spring Branch	Mouth (S10, T88N, R5W, Delaware Co.) to spring source (S35, T89N, R5W, Delaware Co.)	2.83
Spring Creek	Mouth (Mitchell Co.) to N. line of S8, T97N, R16W, Mitchell Co.	3.93
Storybook Hollow	Mouth (S7, T86N, R4E, Jackson Co.) to S. line of S12, T86N, R3E, Jackson Co	1.37
Turtle Creek	Mouth (Mitchell Co.) to E. line of S7, T99, R17W, Mitchell Co.	3.45

Twin Springs Creek	**Mouth (S17, T98N, R8W, Winneshiek Co.) to springs in Twin Springs Park (S20, T98N, R8W, Winneshiek Co.)**	**0.61**
Unnamed Creek	**Mouth (S1, T86N, R3E, Jackson Co.) to W. line of S1, T86N, R3E, Jackson Co.**	**0.73**
Unnamed Creek (aka Cold Water Cr.)	**Mouth (S32, T100N, R9W, Winneshiek Co.) to N. line of Section 31, T100N, R9W, Winneshiek Co.)**	**2.46**
Unnamed Creek (aka Glovers Cr.)	**Mouth (S22, T94N, R8W, Fayette Co.) to W. line of S15, T94N, R8W, Fayette Co.**	**1.43**
Unnamed Creek (aka S. Fk. Big Mill)	**Mouth (S8, T86N, R4E, Jackson Co.) to W. line of S17, T86N, R4E, Jackson Co.**	**0.97**
Unnamed Stream (aka Trout Run)	**Mouth (S27, T98N, R8W, Winneshiek Co.) to S. line of S27, T98N, R8W, Winneshiek Co.**	**0.54**
Village Creek	**Mouth (Allamakee Co.) to W. line of S19, T98N, R4W, Allamakee Co.**	**13.32**
Wapsipinicon River	**Confluence with UT in McIntire (S34, T100N, R15W Mitchell Co.) to N. line of (S20, T100N, R15W, Mitchell Co.)**	**5.24**
Waterloo Creek	**Mouth (S35, T100N, R6W, Allamakee Co.) to Iowa-Minnesota state line**	**9.39**
Wexford Creek	**Mouth (S5, T97N, R2W, Allamakee Co.) to W. line of S25, T98N, R3W, Allamakee Co.**	**4.42**
Grand Total		**227.81 miles**

LAKES	**Description (Section, Township, Range)**	**Size (Acres)**
Big Spirit Lake SGMA	**S33, T100N, R36W**	**5684**
East Okoboji Lake SGMA	**S29, T99N, R36W**	**1835**
Lower Gar Lake SGMA	**S32, T99N, R36W**	**251**
Minnewashta Lake SGMA	**S29, T99N, R36W**	**122**
Upper Gar Lake SGMA	**S29, T99N, R36W**	**36**
West Okoboji Lake SGMA	**S20, T99N, R36W**	**3,847**
Dalton Lake	**S34, T84N, R5E**	**2**

Appendix C – Outstanding National Resource Waters

Outstanding National Resource Waters		

Fiscal Impact Statement

Associated with the

Notice of Intended Action

Antidegradation - Water Quality Standards
(Chapter 61)

Prepared by the

Department of Natural Resources

September 2, 2008
Revised October 27, 2008

Table of Contents

Fiscal Impact Statement

Introduction: This Fiscal Impact Statement (FIS) will provide the projected costs and potential benefits associated with the proposed rule changes being addressed in the Notice of Intended Action, Antidegradation – Water Quality Standards (Chapter 61). This rulemaking effort is the most recent effort of the triennial review of Iowa's Water Quality Standards that includes the following topics:

- Incorporate by reference the document entitled "Iowa Antidegradation Implementation Procedure," which proposes an approach to be followed in assessing and minimizing degradation of Iowa's surface waters.
- Update antidegradation policy language with a four tier approach, including the establishment of Outstanding National Resource Waters (ONRW) and Outstanding Iowa Waters (OIW) antidegradation use categories

This evaluation will discuss the fiscal impacts for this rulemaking effort. It is important to note that department staff did not evaluate the specific individual impacts or treatment needs for each wastewater treatment facility that may be required to conduct an antidegradation review. Basic assumptions and evaluations were made on the cost to conduct the antidegradation review on all facilities predicted to be affected. The specific individual impacts and needs resulting from the antidegradation review will be best evaluated by the facility's staff or retained consultant. Innovative or unique treatment methods may be available to some facilities thereby reducing specific costs in this regard.

The number of facilities expected to be impacted is an approximation based on the information available from the NPDES Section and Wastewater Construction Section of the Water Quality Bureau.

Antidegradation Policy Changes: The antidegradation rule is one of three required regulatory elements of the WQS. The other two elements include beneficial uses, and water quality criteria (narrative and numeric). All of these review elements must be administered as a whole. All surface waters of the state are subject to antidegradation provisions. The main purpose of the antidegradation policy and implementation procedures is to protect existing uses of surface waters and to specify how the department will determine, on a case-by-case basis, whether and to what extent existing water quality may be lowered in a surface water.

The Iowa Department of Natural Resources is required by 40 CFR §131.12(a) to develop and adopt a statewide antidegradation policy and to identify procedures for implementing that policy. There has been an antidegradation policy in the WQS, but it was absent formal implementation procedures which limited the policy's usefulness. The proposed implementation procedures include identifying the antidegradation review levels (i.e., the "tiers") that apply to a surface water; determining existing water quality; assessing and determining water quality degradation; identifying and assessing less-degrading or non-degrading alternatives; determining the importance of economic or social development to justify degradation of waters; and establishing intergovernmental coordination and public participation processes.

The antidegradation policy and implementation procedures are intended to provide guidance to persons who are responsible for the regulated activities that may degrade water quality in Iowa.

Regulated activities include any activity that requires a CWA permit or a water quality certification pursuant to federal law.

This effort will also establish the Outstanding National Resource Waters (ONRW) and Outstanding Iowa Waters (OIW) antidegradation use categories. These categories will provide an increased level of protection where degradation is prohibited except in limited circumstances. The implementation procedures detail how the public can nominate a surface water to be afforded these levels of protection to the department.

A. Projected Costs: Antidegradation reviews are required when proposed new or expanded discharges will degrade water quality. In addition to reviewing the necessity for a discharge and the social and economic importance of the discharging activity, the department and applicants must ensure that proposed discharges fully protect beneficial uses, and achieve the highest statutory and regulatory requirements (such as application of appropriate federal effluent limitation guidelines for certain industries, secondary treatment standards for domestic wastewater and appropriate water quality based effluent limitations, where appropriate).

An applicant proposing any new or expanded discharge that would degrade water quality is required to prepare an evaluation of alternatives to the proposed discharge. The purpose of this evaluation is to determine whether or not the proposed discharge is *"necessary," that is, no reasonable alternative(s) exist to prevent degradation*. These alternatives are compared (in terms of practicability, economic efficiency and affordability) to the controls required to protect existing uses and to achieve the highest statutory and regulatory requirements.

Following the analysis of pollution control alternatives, the alternative that is the most practicable, economically efficient, and affordable should be considered the preferred pollution control alternative. If this alternative results in degradation, the applicant must then document the social and economic importance (SEI) of the discharge. Therefore, costs can be incurred in two ways: 1) while performing an antidegradation review and 2) when, as a result of the review, the industry or municipality is required to provide wastewater treatment at a greater level and expense than what would have been chosen prior to this rule becoming effective.

As a result, the cost of implementing these provisions will be borne by applicants of any new or expanded discharge that would degrade water quality and may then be passed on to the users of wastewater systems through sewer fees or rates. It should also be noted that those businesses discharging under a municipal pre-treatment program could indirectly incur costs should the municipal discharge be subject to an antidegradation review. The costs would be incurred if the business was required to upgrade their treatment system in order to meet new discharge requirements at the receiving municipal plant.

While most of the work and costs associated with implementing the revised policy and new implementation procedure will be borne by applicants for new and expanding discharges, the department will be required to expend more time on the review of the applications and facility plans. This can take the form of pre-application/facility plan conferences, alternatives analyses review, and socio-economic analyses review. In general, the revised policy and new implementation procedures apply only to new and expanded discharges which results in a range of approximately 104 to 164 facilities per year.

The department has little experience in performing evaluations regarding the social or economic conditions within a community and performing this work will require training or assistance from other agencies. Other agencies may be contacted occasionally for information on population trends,

demographics, tax data, employment data, etc. Potential sources for this information may be city and county officials, state agencies (e.g. Department of Economic Development), state business organizations (e.g. Chamber of Commerce), and federal agencies (e.g. Census Bureau)

Table 1 – Summary of Fiscal Impact

Overall	**Range of Annual Costs (Lower Cost – Higher Cost)**
Estimated of annual state/department cost	**$75,363.23 - $115,978.14 (for FTE)**
Estimated Public and Private Annual Cost	
-Municipal Construction Projects	($181,500 – $1,025,600)
-Industrial Construction Projects	($41,125 – $320,000)
-New and Expanded Treatment Agreements	($123,750 – $641,000)
-New Discharges that do not require a Construction Permit	($82,500 – $641,000)
Estimated Public and Private Aggregate Cost	**$428,875 – $2,628,100**

Table 2 - State Cost

State Cost	**Estimated Cost**
Department of Natural Resources	$75,363.23 - $115,978.14 annually for a Senior Engineer FTE or work load equivalent to a Senior Engineer FTE – includes fringe costs

Table 3 – Lower Cost Scenario

Lower Cost Scenario	**Estimated Cost**
Part 1: Analysis of No Discharge	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 16 hours = $1,600)
Total	**$1,600**
Part 2: Analysis of Minimally Degrading Alternatives	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 16 hours = $1,600)
Total	**$1,600**
Part 3: Documentation of Socio-Economic Importance	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 8 hours = $800)
Total	**$800**
Part 4: Public Notice and Participation	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 1 hour = $100)
Public Notice Cost	$25
Total	**$125**
Total Estimated Costs Per Facility	**$4,125**
Estimated Annual Cost (104 projects annually)	
-Municipal projects	($4,125 * 44 = $181,500)
-Industrial Construction Projects	($4,125 * 10 = $41,125)
-New and Expanded Treatment Agreements	($4,125 * 30 = $123,750)

-New discharges that do not require a construction permit	($4,125 * 20 = $82,500)
Estimated Aggregate Cost for lower cost scenario	$428,875

Table 4 – Higher Cost Scenario

Higher Cost Scenario	Estimated Cost
Part 1: Analysis of No Discharge	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 40 hours = $4,000)
Total	**$4,000**
Part 2: Analysis of Minimally Degrading Alternatives	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 40 hours = $4,000)
Total	**$4,000**
Part 3: Documentation of Socio-Economic Importance	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 40 hours = $4,000)
Total	**$4,000**
Part 4: Public Notice and Participation with Response	
Personal Service Cost – Engineering Consulting Firm	($100 per hour * 40 hours = $4,000)
Public Notice Cost	$25
Total	**$4,025**
Total Estimated Costs Per Facility	**$16,025**
Estimated Annual Cost (164 projects annually)	
-Municipal projects	($16,025 * 64 = $1,025,600)
-Industrial Construction Projects	($16,025 * 20 = $320,500)
-New and Expanded Treatment Agreements	($16,025 * 40 = $641,000)
-New discharges that do not require a construction permit	($16,025 * 40 = $641,000)
Estimated Aggregate Cost for Higher Cost Scenario	**$2,628,100**

B. Assumptions: The antidegradation review consists of an alternatives analysis examining non-degrading and less degrading alternatives for wastewater treatment, socio-economic importance analysis, and a public notice/participation process. The components for review are the same whether the regulated facility is private or public/municipal; therefore, the same assumptions are used to estimate costs for both public and private facilities.

The duration of the proposed rule is indefinite and it is assumed that each subsequent year will be consistent with the assumptions used to calculate the annual costs identified in this fiscal impact statement.

Costs for the public entities have been determined from research with consulting engineers, department engineers, and other state's cost estimates.

Existing facilities that are expanding the size of their treatment plants or planning to receive additional waste from industrial contributors outside of their design capacity (e.g., a new treatment agreement for a metal finisher to a municipal wastewater treatment plant) will be required to perform an antidegradation review. New facilities that require construction permits such as a rest area or mobile home park and new facilities that DO NOT require construction permits such as cooling water discharges will be required to perform an antidegradation review.

Cost will depend on the complexity of the situation. Factors including how many different types of pollutants are in the wastewater, the existing quality of the stream receiving the discharge, and the size and type of the treatment system. The higher cost scenario represents the probable costs associated with performing an antidegradation review on the largest most complex systems and assumes heavy public involvement. The low cost scenario is associated with the least complex. The range of costs considers size, complexity, public interests, and range of ease. For example, an alternatives analysis for a new cooling water discharge may be simpler since alternatives may be limited and have less potential for controversy where a large complex discharge may explore more alternatives and may be more controversial as result of the size of their discharge. The cost estimates are intended to include both ends of the spectrum. Some situations may not require detailed analyses and result in less cost while others will require much more analysis and public involvement and result in higher costs. At this time, there is no way to accurately determine which projects will or will not require more analysis and which projects may or may not be controversial.

Of the scenarios described in the tables above, the department estimates the following annual occurrence ranges (Low – High) that may require an antidegradation review:

- 44 – 64 New or Expanded Discharges (excluding unsewered communities and disinfection-only projects).
- 10 – 20 New Industrial Construction projects
- 30 – 40 New or expanded industrial contributors to municipal wastewater treatment plants
- 20 – 40 New discharges that do not require a construction permit
- **104 – 164 estimated overall annual range for regulated facilities needing an antidegradation review.**

Because certain costs imposed on the permit applicant cannot be completely quantified at this time, this fiscal analysis does not fully delineate these costs. These costs include, but are not limited to those associated with implementing additional technology beyond what is currently contemplated by existing rules and indirect costs related to inflation and loss of revenues caused by potential delays in permit issuance. The additional technology beyond what is currently contemplated by existing rules may be required if the alternative is practicable, economically efficient and affordable. This can result in higher costs for a facility in addition to the cost of performing the antidegradation review if the alternative is more expensive than the base pollution control option to meet existing rules. It's not possible to determine how often this may occur in terms of providing an accurate fiscal impact estimate.

Every antidegradation review performed by an affected facility will require the department to conduct its own review of the analysis submitted. The time needed for review will vary based on the complexity and potential controversy associated with the project. The department will attempt to roll the new antidegradation review process into staff's current workloads. However, with over 100

reviews needed annually and having approximately 255 workdays per year (1 review every 2.55 days at a minimum) it is estimated that at least one new position will be needed to effectively implement this new rule. For state cost, complex technical review of an antidegradation alternatives analysis will result in the workload equivalent for an Environmental Engineer Senior with expertise in water quality analysis and engineering economics in the Wastewater Construction Section of the Water Quality Bureau.

C. OIW & ONRW Impacts. The application of Outstanding National Resource Waters (ONRW) and Outstanding Iowa Waters (OIW) antidegradation categories may impose economic limitations for a given watershed. These two categories provide a very high level of protection by prohibiting degradation in all but very limited circumstances. This level of protection will limit the options of existing municipal and industrial facilities to expand or grow and for new facilities to locate in that area depending on the pollutants of concern in their wastewater discharge and the distance from the OIW or ONRW water.

No new discharges/degradation would be allowed, unless, in the case of the OIW category, the discharge/degradation from permanent new or expanded sources serve to maintain or enhance the value, quality, or use of the OIW. New industries (e.g. ethanol plants), on-site systems, and, quarries would be required to treat their wastewater to a high level so that their discharge would not increase the amount of pollutants already in the stream. They could also choose a non-degrading option, such as land application or piping the discharge to another watershed. All of these options can be technically infeasible and/or cost prohibitive depending on specific circumstances).

Any existing permitted discharger will not be allowed to add any additional pollution to the stream. This means municipal wastewater treatment plants like the Cities of Waukon or West Union (see table 5 below of affected facilities that currently discharge to the proposed OIWs) will have limited options available to choose from when expanding their wastewater treatment plants becomes necessary. All these NE Iowa communities listed are growing, except for the City of Orchard, and may need to expand their treatment systems in the future to accommodate for this future growth. The additional flow/loading that may result from the wastewater treatment plant expansion will need to be land applied or piped to a different watershed or treated to a higher extent so that no additional pollution is added to the stream. This can be difficult in Karst topography areas due to inadequate amounts of soil and challenging topography. In general, these are more expensive and sometimes cost prohibitive options.

Table 5 – Outstanding Iowa Waters with known Affected Facilities

OIW Waterbody	Facility Name
Bohemian Creek	Protivin, City of
Canoe Creek	North Winneshiek School
Fenchel Creek (aka Richmond Springs)	Strawberry Point, City of (South)
Hickory Creek	Luana, City of
Maquoketa River	Camp EWALU
	Associated Milk Producers, Inc.
	Strawberry Point, City of (South)
Otter Creek	West Union, City of
Paint Creek	Foremost Farms USA
	Waukon, City of
	Waterville, City of
Spring Branch	DNR Manchester Trout Hatchery
Spring Creek	Orchard, City of
Unnamed Creek (aka Trout Run)	DNR Decorah State Hatchery
Village Creek	Makee Manor Care Facility

To highlight these costs, the department performed a rough estimate between an expansion of a controlled discharge lagoon wastewater treatment facility for surface water discharge versus a land application system (i.e., a no discharge, non-degrading alternative). The cost increases were identified to be significant, increasing the cost of a traditional wastewater treatment plant expansion by factors of 2.4 to 2.9 depending on the size of expansion. In large part, this is because more storage is generally required for land application than is required for a controlled discharge. The no discharge alternative assumes no discharge of the increased loading only (i.e. the existing lagoon facility would still discharge but would be required to land apply any flows over the existing design capacity).

The extent to which the facilities noted in Table 5 will be affected is unknown. However, some facilities are more likely to experience implementation issues than others. For example, the majority of the municipalities listed will likely need to expand their operations to handle future population growth. Others like the DNR Fish Hatcheries, North Winneshiek School, and Makee Manor Care Facility are likely more “static” in their operations and may not need to expand or grow their operations and therefore will not need to expand their wastewater treatment plant infrastructure. In addition, it is important to note that there are several additional waters being proposed in this rule making that do not have any existing NPDES regulated facilities, but could make it difficult, if not prevent, any new discharger (e.g. industries) from locating in these watersheds.

A complicating factor in how facilities discharge in OIW or ONRW watersheds is whether they discharge directly to the OIW or ONRW segment, or indirectly via a stream tributary network that eventually reaches the OIW or ONRW segment. Any new or expanded discharge will be examined on a pollutant-by-pollutant basis. Some pollutants can decay naturally and may dissipate before reaching an OIW or ONRW segment. One is example of this situations is a wastewater treatment plant that discharges indirectly to Otter Creek through 20 miles of unnamed stream tributaries. The unnamed tributaries are not OIW waters and therefore degradation can occur after a Tier 2 antidegradation review, but degradation is prohibited downstream in the OIW or ONRW segment. Pollutants such as ammonia-nitrogen, chlorine, or bacteria naturally decay or dissipate over time as

they travel downstream. Each pollutant and discharge scenario can be different and will need to be closely examined to determine if degradation in the OIW water may actually occur.

New discharging on-site wastewater disposal systems would be prohibited from degrading OIW and ONRW waters. Non-discharging on-site wastewater disposal systems, such as a mound system, would qualify as a non-degrading option. These systems are, in general, about 33% more expensive than their discharging counterparts. The typical discharging on-site systems costs around $8,000 while non-discharging systems can cost in the range of $10,000 to $12,000 depending on local variables (e.g. cost of materials, topography).

New quarry operations may be impacted as a result of an OIW or ONRW category. These operations generally require dewatering of some of the pits created during the quarrying process. Dewatering operations may likely be prohibited in OIW and ONRW waters if degradation were reasonably expected to occur. There are quarry operations that do not require dewatering. However, if this option is not available it will require the raw materials, like crushed limestone rock, to be quarried outside the watershed and hauled in for projects. This may increase the cost of projects within these watersheds due to increased hauling costs of importing the raw material from quarries outside the watershed.

Waters categorized as OIW and ONRW will make it difficult, if not prevent, new industries from locating in the communities or elsewhere in these watersheds. As a result, any attempt at broadly estimating a statewide cost for all potentially affected entities that may be directly or indirectly affected by the application of an OIW or ONRW category will present a range in costs so wide as to be effectively meaningless. The overall costs statewide cannot be estimated with any degree of accuracy due to the absence of readily available information to thoroughly research the multitude of variables that will 1) affect whether or not treatment improvements will be technically possible, and if yes, what will happen if they're cost prohibitive, and 2) what industries may choose not to locate in the watershed or in Iowa due to an OIW or ONRW categorization.

D. Anticipated Benefits. The anticipated benefits from revised antidegradation policy and new implementation procedures are associated with the potential improvements to instream protections for aquatic and semiaquatic life, wildlife and livestock watering needs, and aesthetic conditions due to increased attention toward researching treatment alternatives. The proposed implementation procedures require a systematic review of various options for treating a proposed discharge. The procedure will encourage dischargers to select a plan that achieves the most practicable, cost-efficient and affordable treatment.

There may be indirect marketing benefits associated with waters categorized Outstanding National Resource Waters (ONRW) or Outstanding Iowa Waters (OIW). These benefits may be realized by increased tourism to these waters and other nonuse benefits such as Iowans simply knowing these resources are better protected and preserved for future generations.

None of these potential benefits has a readily identifiable monetary value and thus will not be estimated in this impact statement.

E. Anticipated Implementation Approach: The Department recognizes that the implementation of these proposed rules and rule changes may have significant economic impacts. Historically, compliance with the provisions of the federal Clean Water Act has carried a significant price tag and will continue to be costly as requirements and guidelines are reaffirmed. It is the goal of the Department to implement these proposed rules in a reasonable, practicable, and responsible manner. Thus, the implementation will be linked to the either the reissuance of each facility's

NPDES permit, NPDES permit amendment, or wastewater construction permit. All available NPDES provisions and consideration will be made to allow adequate time for each facility to comply with the adopted rules according to their time constraints, economic abilities, and source of financial aid.